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ABSTRACT

The aim of this study was to examine the health and nutritional status of low-income women in Upstate New York and to identify problems that interfere with their employment. Questionnaires on health and work, complete medical and employment histories, physical examination, laboratory tests, dental examination and diet recalls were obtained for 469 low-income women, mothers of at least one teen-age child. Among the major findings are the following: The greater the total number of current medical complaints that the women reported, the less likely they were to be employed. Among these complaints neurasthenic symptoms including tiredness, insomnia, headaches and nervousness together were significantly more common among the non-working groups. Physical and mental disabilities, documented by examination, were also associated with unemployment. Obesity was the most common nutritional problem encountered. Unemployment was related to obesity, and the incidence of unemployment rose directly with the degree of fatness. The association between unemployment and obesity could be explained as being due to the coexistence of diseases known to be complications of obesity, such as hypertensive heart disease and diabetes. Variables correlated with current welfare status (welfare dependency) included absence of an employed husband, disabilities arising in early life and the presence of chronic disease. The total number of years a woman had been employed since leaving school was related directly to education and job skills and inversely to the number of children and number of pregnancies. (Author/JM)

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HEALTH AND NUTRITIONAL STATUS OF WORKING AND NON-WORKING MOTHERS IN POVERTY GROUPS

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16. Abstracts

Aims were to examine health factors which determine employment status of low income women. A sample population of 469 middle-aged rural-urban fringe women in Upstate New York were studied through questionnaires, physical examination and lab tests. Current medical complaints, nervous symptoms and physical and mental disabilities were associated with unemployment. Most medical findings were of preventable chronic ailments. Dental condition was poor with evidence of neglect. Obesity, the commonest nutritional problem, was associated with unemployment, an association explained by secondary disabling disease. Disabilities arising in early life influenced current welfare status. Past employment was related directly to education and job skills, inversely to the number of pregnancies. Recommendations: development of positive health attitudes, provision of early and preventive medical and dental care, health education, development of exercise and diet programs to prevent obesity, physical and vocational rehabilitation by a team approach, improved family planning services and special job training for women with disabilities.

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Socioeconomic status
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Summary of Salient Findings

1. Finding

The greater the total number of current medical complaints that the women reported, the less likely they were to be employed. Among these complaints neurasthenic symptoms including tiredness, insomnia, headaches and nervousness together were significantly more common among the non-working groups.

Implication

If women feel that they are not well, this proves a deterrent to work, whether or not the symptoms are associated with the presence of disease.

2. Finding

Physical and mental disabilities, documented by examination, were also associated with unemployment.

Implication

Women may be unable to work because of health impairment which limits their capacity to undertake tasks necessary to their employment.

3. Finding

Most medical findings were of chronic ailments which could have been prevented. Included in this category were obesity and its complications, late effects of accidents, infections or nutritional deprivation, back syndromes, as well as chronic cardiovascular and respiratory diseases.

Implications

Given more positive attitudes toward health maintenance and rehabilitation as well as better diets through early and adult life, these present medical problems could have been avoided.

4. Finding

Obesity was the most common nutritional problem encountered. Unemployment was related to obesity, and the incidence of unemployment rose directly with the degree of fatness. The association between unemployment and obesity could be explained as being due to the co-existence of diseases known to be complications of obesity, such as hypertensive heart disease and diabetes.

Implications

At an earlier time, control of obesity alone would have increased employability. Since in many cases the obesity had been established long enough for the women to incur serious complications, it would not only be necessary to impose methods of weight control, but also to treat the secondary effects in order to make the women fit for work. The feasibility of this task was questioned in those with gross obesity and abnormal electrocardiographic findings.

5. Finding

Variables correlated with current welfare status (welfare dependence) included absence of an employed husband, disabilities arising in early life and the presence of chronic disease.

Implications

Women who have active health problems or old disabilities which render them unfit for work are unable to achieve independence from public assistance unless they have family support.

6. Finding

The total number of years a woman had been employed since leaving school was related directly to education and job skills and inversely to the number of children and number of pregnancies. The more pregnancies a woman had, the greater the likelihood that she had dropped out of school early.

Implications

It is not only the presence of children in the home which limits employability of women, but also that the woman whose life has been punctuated with pregnancies is less likely to have acquired education, job skills, and work experience which fit her for employment.

7. Finding

Many of these women had very large families. Childbearing and rearing had prevented them from seeking, obtaining or holding jobs in the past, and their lack of previous work experience often prevented present employment. However, 90 percent of the sample said they had never received advice from a family planning service. That this was not due to preference for large families was indicated by the fact that over 30 percent of the sample had finally been rendered surgically incapable of childbearing by tubal ligation or hysterectomy, often at an early age.

Implication

Provision of family planning services to low income rural populations must be improved. The need for day-care services and counseling for working mothers is also obvious, as has been discussed by Feldman (1970).

8. Finding

The population was not homogeneous with respect to life style. Four subgroups were defined, a highly motivated group (working and off welfare), a neglected group (unemployed and on welfare), a traditional female group (unemployed, off welfare, but with an employed husband), and an unskilled group (working and on welfare). The most valid indicators of social mobility were found to be past work achievement, welfare independence, education and health. Indicators of chronic poverty and welfare dependence included lack of schooling, lack of health care, lack of past jobs, lack of family planning and lack of a working husband. Self-neglect was primarily associated with welfare and unemployment or underemployment.

Implication

Collective effects of past experience are better determinants of potential for leaving welfare than such variables as current employment or unemployment. For example, unskilled women with little education and limited physical capacity may be able to get low paid jobs, but their earnings will be too low to allow them to get off welfare. Predictive indices, developed in this study, should enable manpower administrators to select those most likely to benefit from work incentive programs.

9. Finding

Predictive indices described above were unrelated to current health problems other than those due to past neglect. Observed health problems were in many instances amenable to therapy. There were women in the employed groups who were medically handicapped.

Implication

If a woman has work motivation and educational advantages, she will obtain employment in spite of ill health. However, physical rehabilitation would increase employability among those women who have the necessary background for work.

10. Finding

Women with job skills were less likely to consider that health problems limited the type of employment they could undertake.

Implication

Job skills are a most valuable asset to women with health disabilities because they may be able to carry out skilled or semiskilled operations requiring less physical effort.

11. Finding

It was not possible to ascertain the availability of medical and related services when our population was younger. Present facilities in the areas of the survey were limited with respect to clinics but otherwise fairly adequate.

Implications

Clinics and outreach medical projects offering both primary and rehabilitative care are required in Upstate New York.

12. Finding

A large subgroup of our population had not availed themselves of preventive health facilities or care. A smaller group had apparently never been to the doctor even when sick. Cultural fear of doctors and dentists was found.

Implications

Health education in its wider sense is needed for these women and their families.

13. Finding

Examination of Medicaid records showed that symptomatic care took undue precedence over preventive medicine and that prescription drugs were consumed excessively by the population.

Implication

There is a limited availability of optimal medical care which should include health education as well as preventive and corrective measures.

14. Finding

Employers of our sample recognized certain health problems as occupational or insurance risks. They were therefore as reluctant to hire women with obesity, back problems, skin diseases, and heart disease as they were to take on those with gross physical defects or alcoholism.

Implications

Employer prejudice is a determinant of unemployment of moderately handicapped potential workers.

15. Finding

In addition to the marked prevalence of obesity, the effects of poor nutrition among these women were particularly shown by their short stature.

Within the sample, shortness was strongly associated with lack of education, past unemployment and poor dental health.

Implication

Effects of malnutrition in early life were still evident in middle age. These effects were apparently associated with low socioeconomic status of origin.

16. Finding

Real medical disabilities and illnesses, documented by physical examination and other tests, were frequently associated with nervous symptoms (headache, tiredness, insomnia and nervousness) and complaints associated with poor physical condition (e.g., breathlessness).

Implication

From this finding and finding 1, above, we infer the existence of a vicious cycle, in which inactivity enforced by disease causes neurasthenia, which may become chronic and reduce employability. Breaking into this cycle by competent counseling as well as physical rehabilitation would be necessary in order to return some workers to the job market after illness or injury. As in the case of obesity, this may not be possible if too long neglected.

Conclusions

The health situation of our sample population has been influenced by sociocultural factors. Included among these are isolation, poverty, medical neglect and malnutrition in early life, lack of education and a feeling of helplessness. Escape from these attitudes and conditions has only been possible for a small minority. Factors contributing significantly to independence and social mobility have been acquisition of job skills, family planning and health care.

The possibility of returning this population to full health is limited. However, intervention among similar groups at an earlier age should prove more successful. Where full physical rehabilitation is not possible, as in our sample, vocational training, counseling and health maintenance would permit employment of a larger proportion of the women. In this context the role of nutrition aides and paramedical personnel in educating women on health matters should be expanded and is feasible at low cost.

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This report has been made possible through the collaborative activity of many people who were motivated to offer their expertise and time to this project, in which the health and nutritional problems of low-income women were evaluated as they relate to their ability to function in daily life and in job situations. Much was known of the women when we started; this information being derived from the earlier study directed by Professor Harold Feldman of the Department of Human Development and Family Studies and Professor Ethel Vatter from the Department of Consumer Economics and Public Policy in the College of Human Ecology at Cornell University. It was through discussions with them and with Dr.

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FIELD SURVEY

Background Information

A major study of poverty groups in Upstate New York was previously undertaken by a multidisciplinary group at Cornell University under the direction of Professor Harold Feldman. The first purpose of this investigation was to find effects on the family due to employment of the welfare mother but an additional aim was to delineate how personal or family problems kept her from working. Subjective differences were found between employed and unemployed women, the latter reporting poor health and citing illness as a reason for leaving work. It was difficult to determine from these reports whether physical complaints were a reason or a rationalization for not being employed. A preliminary field study by Drs. Roe and Latham of women in Tompkins County, which included a questionnaire and medical examination, showed that the excessive symptoms of ill health among the non-working group were correlated with abnormal physical findings. The question therefore arose whether substandard health conditions precluded employment, and also what were the reasons for poor health among these women. It was determined that these questions should be explored in a larger subgroup of the Feldman population. The importance of such an investigation was not only apparent in terms of the federal and local policy to substitute work for welfare, but also in relation to remedial measures which should be instituted to guard against medical neglect in certain segments of the population.

Selection of the Sample Population

The central purpose of the study was to investigate relationships between ill-health and unemployment among low-income women. This aim was initiated by the fact that when Professor Harold Feldman and his co-workers carried out their project entitled "A Study of the Effects on the Family Due to Employment of the Welfare Mother", Manpower Administration, U.S. Department of Labor Contract No. 51-34-69-07, non-employed women reported that they were not in as good health as the employed.

The 469 women interviewed and examined in our field survey comprised a sub-sample of the population of 1,095 women interviewed by Feldman. Women in the sample were either welfare or former welfare recipients. As of the time of their inclusion in the Feldman study, they all had at least one teenage child. The sub-sample included in our study were resident in Tompkins (61), Cortland (38), Cayuga (71), Broome (186), Chemung (72) and Onondaga (41) Counties of Upstate New York, outside major cities.

In order to enroll this population, we sent out 941 letters to women in the counties above stated, inviting them to participate in the program. Their names and addresses were obtained from computer card records produced during the Feldman study; addresses being updated by use of telephone and other directories as well as through communication with welfare departments within the county jurisdictions. Among the

Table 1. Breakdown of numbers of women who participated in Feldman's study but not in the present study.

Women interviewed	469	50%
Women not interviewed	472	50%
Women sent original letter	941	100%

Reasons for 472 women not being interviewed:	Number of Women
Unable to be contacted (contact attempted, letters returned)	68
Did not return post card enclosed in original letter	142
Moved	83
Refused (no reason given)	49
Refused for health reasons (woman or family)	15
Schedule conflict (work, etc.)	7
Deceased	2
Did not keep appointment for interview (after agreeing to participate)	106
Total	472

Table 2. Comparisons of subjects from Feldman's study who did and did not participate in the present study.

Description:	Did Participate		Did Not Participate	Total
	No.	%		
Not working	260	(39.3)	402	662
Working	209	(48.3)	224	433
G = 452.04 (p < .001)				
On welfare	291	(41.4)	412	703
Not on welfare	178	(45.4)	214	392
G = 1.653 (n.s.)				
Husband absent	196	(40.9)	283	479
Husband present	273	(44.3)	343	616
G = 1.2732 (n.s.)				
Welfare, woman nonemployed, husband absent	75	(35.0)	139	214
Welfare, woman nonemployed, husband present	100	(41.7)	140	240
Welfare, woman employed, husband absent	81	(49.7)	82	163
Welfare, woman employed, husband present	35	(40.7)	51	86
Formerly welfare, woman nonemployed, husband absent	12	(34.3)	23	35
Formerly welfare, woman nonemployed, husband present	73	(42.2)	100	173
Formerly welfare, woman employed, husband absent	28	(41.8)	39	67
Formerly welfare, woman employed, husband present	65	(55.6)	52	117
G = 17.555 (p < .05)				

women who were contacted by mail, 575 agreed to come into the study, but of these 106 failed to keep their appointments for interviews. Valid reasons for non-participation were only obtained in 24 cases (Table 1).

No attempt was made to enroll the subjects from Seneca, Steuben or Oneida Counties who had participated in the Feldman investigation. This decision was made in the case of Seneca and Steuben Counties because of small case load and in the case of Oneida County because of the poor feasibility of setting up a field operation at this distance from Ithaca.

Comparisons were made of the characteristics of women who had been in Feldman's study and were then included in our health study and those of Feldman's sample who did not take part in our study. It was found that our sample differed significantly from that of Feldman in that more of the women in our sample were from Feldman's working group than from his unemployed group. There were no significant differences between our population and the original sample in the distribution of welfare versus non-welfare cases or with respect to marital status of respondents (Table 2).

Formal training sessions for interviewers were held on September 14 and 17, 1971, at which times Dr. Roe gave them preliminary instruction and thereafter the sessions were directed by Mrs. Susan Goldman. The two dietitians evaluated their questionnaire under direct supervision of the project directors. Pre-testing of questionnaires was carried out on September 10 and again on September 18, when day care mothers, not included in the sample population, were interviewed and given a complete physical examination.

Description of the Survey

The field survey was carried out between September 21 and December 10, 1971. During that period, 469 women were interviewed and examined in church buildings, community halls or health centers within Tompkins, Cayuga, Cortland, Broome, Chemung and Onondaga Counties in Upstate New York (Table 3). The liaison officer and her assistants established temporary clinics in these buildings, such that waiting areas, interviewing rooms, examination booths and field laboratory facilities were provided. Except when health centers were utilized, all equipment was movable, being transported from one building to another as the survey proceeded. The survey team consisted of two physicians, a dentist, a registered nurse, two laboratory technicians, a social worker, two dietitians, the liaison officer, eleven interviewers and five drivers who transported the sample population to the centers and back to their homes (Table 4). The interviewers worked in rotation so that at least four were present at each survey session.

The women were brought to the centers by appointment and on arrival were checked in and briefed with respect to survey procedure. General

Table 3. Locations, dates and numbers of subjects examined.

Date (1971)	County	Center	No. of Women Examined
Sep. 21-23 Nov. 18, 20	Tompkins	First Baptist Church Dewitt Park, Ithaca	57
Sep. 24-25	Tompkins	Groton Community Center Masonic Temple, Main Street Groton	19
Sep. 28	Cayuga	Melone Village Community Hall Thornton Avenue, Auburn	10
Sep. 29-30 Oct. 1-2	Cayuga	First Presbyterian Church 1 Franklin Street, Auburn	37
Oct. 5-6	Cayuga	First United Methodist Church 211 Main Street, Port Byron	13
Oct. 7-9	Cortland	First United Methodist Church 37 Church Street, Cortland	33
Oct. 12	Cortland	American Legion Hall Route 11, Marathon	10
Oct. 13-15	Broome	Central United Methodist Church 17 Nanticoke Avenue, Endicott	32
Oct. 27	Broome	Stillman Medical Center, Windsor	14
Oct. 28-30	Broome	Saratoga Heights Community Hall Saratoga Terrace Apartments, Binghamton	34
Nov. 2-6 Nov. 9-10	Broome	Tabernacle United Methodist Church 83 Main Street, Binghamton	100
Nov. 11-17	Chemung	Chemung County Health Center Heritage Park, Elmira	69
Dec. 7-8, 10	Onondaga	First Baptist Church 22 Syracuse Road, Baldwinsville	41
			469

Table 4. Personnel employed in field study.

Project Physicians: Professors Daphne A. Roe and Michael C. Latham
Social Worker: Mrs. Frances Hall
Research Specialist and Liaison Officer: Mrs. Susan Goldman
Laboratory Technician: Mrs. Susan Stafford
Registered Nurse: Miss Joyce Kantor
Dentist: Dr. Roland Uris
Medical Technician: Mr. Kenneth Klaus
Dietitians: Miss Kay Watson and Mr. Peter Heywood
Interviewers: Mrs. Marion Van Soest, Miss Olga Martinez, Miss Sandhya Moitra, assisted by eight Research Assistants from the Graduate School of Nutrition at Cornell University
Part-time Stenographer: Miss Flora Gross
Hourly Rated Employees: Five student drivers charged with moving equipment and transporting the sample population

Table 5. Age distribution of sample as of 1971.

Years of Age:	Number of Women	Percent of Sample
25-29	2	0.4
30-34	54	11.5
35-39	152	32.4
40-44	113	24.1
45-49	84	17.9
50-54	46	9.8
55-59	13	2.8
60-64	5	1.1
	469	100.0

Table 6. Marital status of the subjects at the time of the study, 1971.

	Number of Women	Percent of Sample
Married	268	57.1
Widowed	25	5.3
Separated	83	17.7
Divorced	89	19.0
Single	4	0.9
	469	100.0

demographic information as well as the medical history was obtained by the interviewing physician (M.L.) (see Appendix A). The second physician (principal investigator, D.A.R.) elicited information on the respondents' current complaints and carried out the physical examinations (see Appendix B). The dentist (R.U.) performed a complete dental survey, examining the women's mouths with respect to dental disease, dental hygiene, as well as the presence and condition of dentures (see Appendix C). The nurse (J.K.) determined visual and auditory acuity and made anthropometric measurements including weight, stature and triceps skinfold thickness. Electrocardiograms were run routinely by one of the laboratory technicians while the other obtained venous blood samples for hematologic and biochemical analyses. One or the other of the dietitians obtained a 24-hour recall of food intake and, aided by graduate student assistants, recorded information on the dietary pattern. Trained interviewers administered the questionnaire pertaining to the work history and obtained such data as duration of employment since leaving school, number of jobs, job categories, reasons for leaving work including health reasons cited, work attitudes and unemployment insurance received (see Appendices D, E).

The total duration of interviews and examinations for each woman was approximately three hours. Before each woman was returned to her home, she received a check for $15.00 in token payment for her services. In each case, arrangements were made for the examining physician to send reports of abnormal physical findings and/or laboratory tests to the woman's family physician or if no physician was named in this category, to the physician of choice, or to the county commissioner of health. At the time of the interviews or in some cases prior to the interviews, releases were given by the women to allow the physicians to obtain Medicaid records.

Excellent cooperation was obtained from the women who took part in the study. In spite of the length of each interview and examination, most were eager to give information and to relate anecdotes which were recorded even though they were not called for in the questionnaires. Within the total population of low income women, it was obvious that there were several distinctive groups. There were those women who, while they had at one time or another experienced real poverty and welfare dependence, now had steady jobs and often jobs such as nursing, teaching, or nutrition aides which increased prestige. During their interrogation, it was obvious that this group had better education, better personal appearance, and less fatalistic attitudes than others who, for want of education, job skills, steady work or working husbands, were now, as in the past, on public assistance. Those who showed more evidence of personal neglect also tended to describe their problems in an apathetic manner: "I got pregnant"; "I lost my teeth...they just fell out"; "I lost my baby, it was born at home"; "I can't seem to lose weight"; "I can't work on account of my bad back". These women, whose histories told of long-term socioeconomic and health deprivation, had adopted passivity.

Case histories were sometimes difficult to interpret, but the ingenuity of the survey team was such that problems presented by peculiar uses of words, local terms and misdiagnoses were usually solved. The woman who had "black-eye syphilis" as a baby most likely had black (hemorrhagic) erysipelas. The middle-aged woman from Leicester, England who stated that she left school at 13, and when asked why, said that she graduated, could be believed because it was determined that she had completed the then statutory period of schooling in the U.K. "Tubalisation", a word confused with "tubal ligation", was a common form of contraception.

Those graduate student assistants for whom the field survey was a first introduction to women in poverty, commented early on the prevalence of prematurely aged appearances of many of the women: the latter compounded of toothlessness and flabby musculature. Similarly, the dentist was astounded at the extent of dental disease, the nurse commented on the number of women who needed glasses, and the physicians talked over with one another the kinds of chronic disease seen; how the spectrum of diagnoses included those that, while common 30 years ago, are now seldom seen in a more affluent population. These impressions can now be examined in the light of the completed data analysis.

Demographic Characteristics of the Population

The sample consisted of a group of 469 women resident in Upstate New York (the numbers in each county are listed in the Field Survey section) varying in age from 29 to 61 years. The median age was 42.6 years. In examining the age distribution, it is apparent that the population consisted essentially of middle-aged people (Table 5). Responding to the question of marital status, 268 women (57.1% of the sample) stated that they were married, 25 (5.3%) said they were separated from their husbands, 89 (19%) said they were divorced and 4 women (0.9% of the sample) described themselves as being single (Table 6). In total, 268 women said there was a husband present in the home and 201 (42.9%) said there was not. Eight of the women were pregnant.

The subjects' reports of the highest grade completed showed that 81 (17.3% of the sample) had not continued beyond 8th grade and that 276 (58.8% of the sample) did not graduate from high school (Table 7).

Information was obtained in 1972 from welfare departments[1] in the areas of jurisdiction of the sample with respect to persons who were receiving public assistance (other than Medicaid) at the time of the field survey in 1971. It was found that 228 women (52.4% of the sample) were on welfare and 207 (47.6% of the sample) were not on welfare. It was impossible to gain access to records of 26 women who either had moved or whose records had been lost in the Elmira flood disaster (Table 8).

In answer to questions concerning their present employment status, 274 (58.4% of the sample) said that they were working and 195 (41.6% of the sample) that they were not (Table 9). Among those that were working,

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[1] Chemung County, Onondaga County, Town of Union, Tompkins County, Broome County, Binghamton City, Auburn City, Cayuga County and Cortland County Departments of Social Services cooperated in this endeavor.

Table 7. Highest grade completed by the women in the sample

Grade Completed	Number of Women	Percent of Sample
0 - 4th grade	6	1.3%
5 - 8th grade	75	16.0%
9 -11th grade	195	41.6%
12th grade	164	34.9%
Beyond 12th	29	6.2%
	469	100.0%

Table 8. Welfare status of women in the sample

Welfare status	Number of women	Relative frequency (percent)
On welfare	232	52.4%
Not on welfare	211	47.6%
(Missing data)	26	--
Totals:	469	100.0%

Table 9. Employment status of women in the sample

Employment status	Number of women	Relative frequency (percent)
Working	195	41.6%
Not working	274	58.4%
Totals:	469	100.0%

Table 10. Type of employment among women in the sample

	Number of women	Percent of sample
Not working	274	58.4%
Working in sheltered workshop	2	0.4%
Working for others	186	39.7%
Self-employed	7	1.5%
Totals:	469	100.0%

2 (0.4% of the sample) were working in sheltered workshops, 186 (39.7%) were working for others and 7 (1.5%) were self-employed (Table 10).

Women who stated that they were married at the time of the study were asked whether their husband was working. Among the women responding to this question, 175 (65.3%) answered affirmatively, 84 (31.3%) answered negatively and 9 (3.4%) stated that their husbands worked "sometimes".

Since less than 5% of the sample population was non-white, this variable was not considered in the analysis of the data.

Employment Histories

In general terms, the work history of our population could be divided into the recent period, or what the woman is doing now and the longitudinal profile, or what she had done occupationally since, or before, she left school.

At the time of the survey in 1971, 274 women (58.4% of the sample) were unemployed, 186 women (39.7% of the sample) were working for others, 7 (1.5% of the sample) were self-employed and 2 (0.4% of the sample) had jobs in sheltered workshops. A total of 195 women (41.6% of the sample) were gainfully employed. Jobs were classified according to the standard industrial and occupational classification system (U.S. Bureau of the Census, 1970, Census of Population Alphabetical Index of Industries and Occupations, U.S. Government Printing Office, Washington, D.C., 1971). According to the Census Bureau classification, 135 women (30.3% of the sample) were in or had most recently been in jobs included under professional, technical, managerial, administrative, sales, clerical or craftsmen categories. In short, just under a third of the population had or had had jobs that by this classification could be called skilled; the remainder of the women from whom such data could be obtained had jobs as operatives, laborers, service workers or household workers; jobs that could be considered as unskilled by this classification (Table 11). The womens' jobs were also grouped as skilled, semiskilled and unskilled following the New York State civil service levels as guidelines for the present or most recent jobs. Using this classification 326 women (69.5% of the sample) were considered as having unskilled jobs, 93 women (19.8% of the sample) were considered as having semiskilled jobs, 24 women (5.1%) had skilled jobs and 26 women (5.5%) had either not worked or it was impossible to define their work category due to vague description (Table 12). Cross tabulation of the two job classifications (Census Bureau classification vs. skill level using Civil Service guidelines) with pooling of skilled and semiskilled work in the second system, showed that in many instances the Census Bureau classification tended to overestimate the level of job achievement of our women. For instance, women selling Avon products from door to door were classified as sales workers, someone who ran a hot dog stand was classified as manager, women doing general office work were classified as clerical (Table 13). However, the reverse can also be seen, that is, service workers might be semiskilled or even skilled. In general, the more meaningful classification was that in which occupations were skilled or unskilled (the Civil Service guideline system).

Table 11. Type of present or most recent job held by women in the sample, by adapted Census Bureau classification (U.S. Bureau of the Census, 1970. Census of Population Alphabetical Index of Industries and Occupations, U.S. Government Printing Office, Washington, D. C. 1971, pp. X-XIV.)

Code	Category	No. of women	% of sample
1	Professional, technical and kindred	15	3.4%
2	Managers and administrators, except farm	13	2.9
3	Sales workers	24	5.4
4	Clerical and kindred workers	77	17.3
5	Craftsmen and kindred workers	6	1.3
6	Operatives, except transport	140	31.5
7	Transport equipment operatives	1	0.2
8	Laborers, except farm	6	1.3
9	Farmers and farm managers	0	0.0
10	Farm laborers and farm foremen	3	0.7
11	Service workers, exc. private household	128	28.8
12	Private household workers	32	7.2
13	Never worked (23) or don't know (1)	24	--
	Total	469	100.0%

Code	Industry	No. of women	% of sample
1	Agriculture, forestry, fisheries	3	0.6%
3	Construction	1	0.2
4	Manufacturing	160	34.1
5	Transportation, communication, public utilities	5	1.1
6	Wholesale or retail trade	86	18.3
7	Finance, insurance, real estate	8	1.7
8	Business, repair service	2	0.4
9	Personal service	58	12.4
10	Entertainment, recreation	4	0.9
11	Professional (schools, hospitals)	110	23.5
12	Public administration	8	1.7
0	Never worked (23) or don't know (1)	24	5.1
		469	100.0%

Table 12. Skill level of subjects' present or most recent jobs, using New York civil service levels as guidelines

	No. of women	% of sample
Unskilled (Examples: Waitress, bunny girl, dairy maid, assembly worker in shoe factory (putting in shoelaces, gluing soles), store detective, day care mother, sales clerk, general office work--file clerk, housekeeper in motel or office building, nurses' aide, kitchen helper, teacher aide, salesman for Avon products, domestic, short-order cook, elevator operator, receptionist, produce grader and packer, taxicab driver, punch press operator, school bus driver, packing clerk, shipping clerk, laundry and dry cleaning worker)	329	73.8%
Semi-skilled or skilled (Examples: Practical nurse, sewing machine operator, assistant herdsman, assembly line in electronics, bookkeeper, nutrition aide, beautician, job placement clerk, printer's helper, telephone operator, PBX operator, EEG technician, religious workers, recreation workers, florist, health trainee, photo processor, library aide, commercial artist, cashier, carpenter, secretary, bank teller, baker, solderer, textile operative (carding, knitting, looping, topping, weaving, spinning, twisting, winding), riveter, registered nurse, school teacher, institutional cook, welder, restaurant owner, assembly line inspector, tailor)	117	26.2%
Never worked	23	--

Table 13. Comparison of job type and skill classifications of subjects' present or most recent jobs

(Kendall's tau c = -0.44, p <.0001)

Skill class:

	Unskilled		Semi-skilled or skilled	
Job type	No. of women	% of those with this job type in the unskilled category	No. of women	% of those with this job type in the semi- or skilled category
Professional, technical and kindred	0	0%	15	100%
Managers and administrators, except farm	1	8%	12	92%
Sales workers	20	83%	4	17%
Clerical and kindred workers	38	49%	39	51%
Craftsmen and kindred workers	1	17%	5	83%
Operatives, except transport	111	79%	29	21%
Transport equipment operatives	0	0%	1	100%
Laborers, except farm	6	100%	0	0%
Farm laborers and farm foremen	3	100%	0	0%
Service workers, exc. private household	116	91%	12	9%
Private household workers	32	100%	0	0%

When examining the type of industry the women were in during their present or most recent job, four categories accounted for the majority of the sample: 160 women (34.1 per cent of the sample) in manufacturing, 86 women (18.3%) in wholesale or retail trade, 58 women (12.4%) in personal service and 110 women (23.5%) in professional and related services. This latter group included women working as aides in schools and hospitals, a caseworker aide and nutrition aides (Table 11).

A characteristic of the occupational histories was the short or relatively short duration of time the women had been employed. In looking at the number of years the women were working between 1962 and 1971, it was found that 47.2% of the sample had been in jobs for 5 or less than 5 years. This figure was obtained by actually adding the total lengths of each job in the last ten years. Another indication of the past percentage of employment was calculated by dividing the number of years during which the woman had worked at all by the total number of years since she was 16 or, if she left school after that age, since she left school. Although this will be referred to for brevity as the percent of adult life employed, it may in some cases be greater than 100 in the case of women who had worked while still attending school; and in the case of women who had held very short temporary jobs occasionally, it may be an overestimate. The mean for this variable was 43.5% of the potential working years, and the range 0 to 136%.

Change of jobs was not infrequent, but not excessive considering the lack of job skills among these women. Between 1962 and 1971, the minimum number of jobs held was zero and the maximum 9 (mean 1.7 for the whole sample, 2.3 for those who had a job in that time). Since leaving school, the mean number of jobs held was 3.67 (minimum 0, maximum 12). It was found that 141 women (30.1% of the sample) had been employed at their present or most recent job for less than 1 year. This finding is consistent with a mean length of employment of three years, because if the individuals in a population change jobs every three years, on the average, at any one time approximately one-third of them will have changed jobs within the year (Figure 1).

Health problems were a common reason for leaving work, but such health problems were seldom work-induced or work-associated. Health problems, unrelated to work, were cited by 193 women (41.2% of the sample) as reasons for leaving work on one or more occasions (Table 14). Pregnancy was the single most common health-related reason for leaving work and 154 women (32.8% of the sample) had left work for this reason one or more times (Table 15). Only seven women had left work due to illness or injury of occupational origin and 23 women had left their jobs because of illness or injury aggravated by work (Tables 16, 17). Non-medical causes for leaving work were cited by 356 women, and the mean number of times they had left their jobs was 2.67 (minimum 1, maximum 9 times) (Table 18).

Variables positively correlated with present employment were total years worked in the last ten, total years of employment in relation to

Figure 1. Number of women, among the 469 in the sample, who had been employed a given number of years at their present or most recent job.

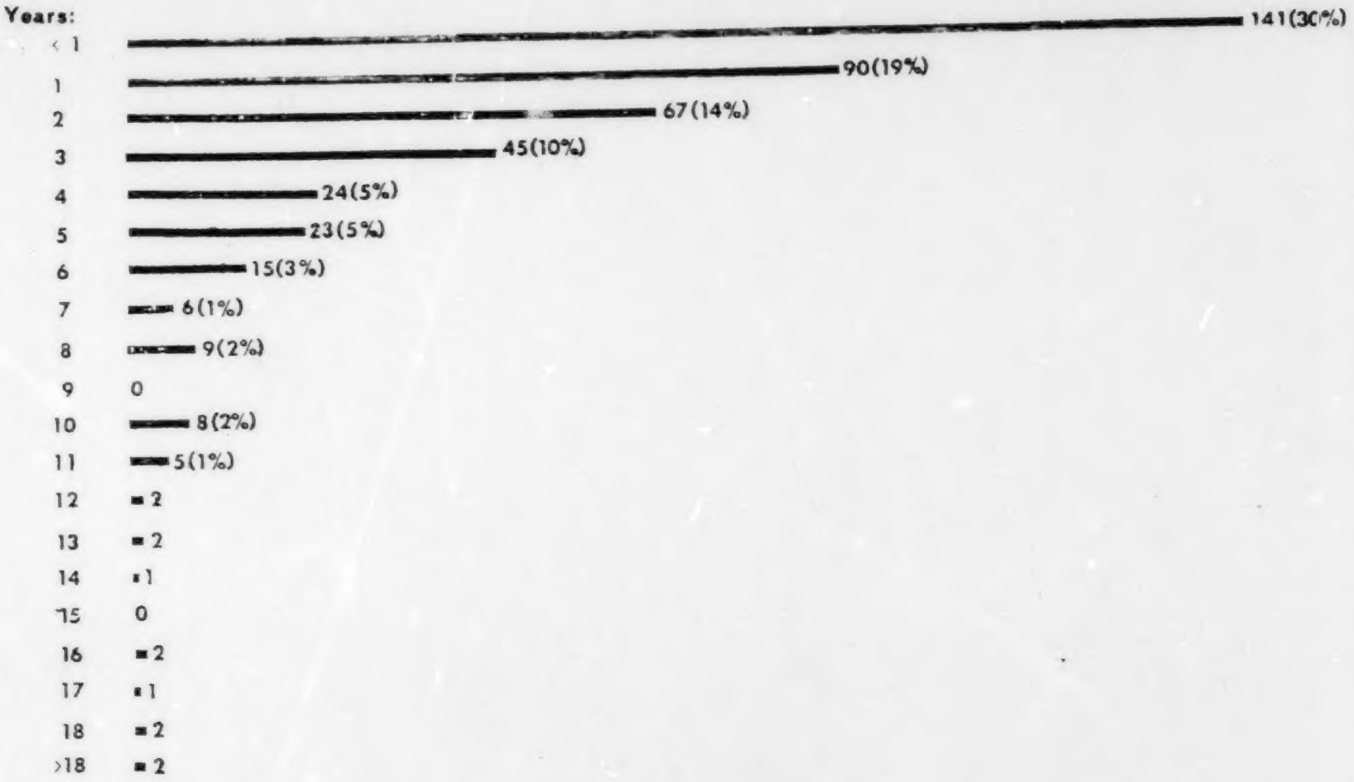

Table 14. Number of times women in the sample left their jobs because of medical reasons unrelated to work.

No. of times	No. of women	% of sample
0	276	58.8%
1	126	26.9
2	46	9.8
3	16	3.4
4	5	1.1
Total	469	100.0%

Table 15. Number of times women in the sample had left work because of pregnancy

	Number of women	Percent of sample
0	315	67.2%
1	109	23.2%
2	31	6.6%
3	12	2.6%
4	2	0.4%
Totals:	469	100.0%

Table 16. Number of times women had left work due to illness or injury caused by employment

No. of times	No. of women	Percent of sample
0	462	98.5
1	7	1.5
Total	469	100.0

Table 17. Number of times women had left work due to illness or injury aggravated by work

No. of times	No. of women	Percent of sample
0	446	95.1
1	20	4.3
2	3	0.6
Total	469	100.0

Table 18. Number of times women had left work due to non-medical reasons

No. of times	No. of women	Percent of sample
0	113	24.1
1	108	23.0
2	92	19.6
3	63	13.4
4	43	9.2
5	24	5.1
6	12	2.6
7	8	1.7
8	5	1.1
9	1	0.2
Total	469	100.0

Table 19. Correlations with employment status, 1971; not working = 1, working = 2

At the <.001 level of significance:
- Welfare status, 1971, r = -.18
- Total years employed/years since age 16 or since left school, r = .42
- Total years of employment in last 10, r = .62
- Education (grouped by highest grade completed), r = .18
- Marital status, r = -.17
- Work limitation, physical exam, r = -.16
- Mental illness or retardation, physical exam, r = -.19
- Number of nervous symptoms, r = -.15

At the <.01, >.001 level:
- Skill class, Civil Service, r = .12
- Disability from injury, medical history, r = -.13
- Total number of disabilities, medical history, r = -.12
- Total number of diagnostic indices, physical exam, r = -.12
- Mental disability, medical history, r = -.14
- Sedatives and/or tranquilizers, currently taken, r = -.13

At the >.01, <.02 level:
- Number of children, r = -.09
- Sum of weights, medical problems at birth, r = -.10
- Sum of weights, medical problems, whole medical history, r = -.10
- Presence of disease, excluding accidents, physical exam, r = -.10
- Triceps skinfold thickness, mm., r = -.10

potential years of working, education and job skills (Table 19). Major variables associated with unemployment were welfare dependence, presence of a husband, number of children, physical work limitation, mental illness, nervous symptoms, history of disability from injury, presence of disease on the physical examination, past dental neglect and obesity.

In other words, for this sample of women, the likelihood of employment can be determined from previous work history, education, whether they have worked in skilled or semiskilled jobs, whether they are currently married, how many children they have, as well as from their past medical history, their present medical condition, and their degree of fatness.

Relationships of family size, marital status and education to the employment status of married women have previously been documented (Waldman, E. and Gover, K. R., April 1972. Marital and family characteristics of the labor force. Monthly Labor Review 95(4)). It was shown by Waldman and Gover that women in the U.S. who are employed full time have an average of 2.67 children while those who are unemployed in a similar age range have an average of 3.42 children. Among married women, with a husband present, 41 per cent participate in the work force while for women who are divorced or separated, participation in the work force is 70% and 50% respectively. More than 50% of women with a college education are working, 44% of high school graduates are working, and only 33% of those who have completed 11 years of school or less are working.

Medical History

The medical history of each subject from birth was obtained by a structured interview (Appendix A). Each illness or accident was tabulated by diagnosis according to the international classification (International Classification of Diseases, 8th Rev., Adapted for Use in the United States. PHS Publ. 1693, pp. 1-45, National Center for Health Statistics, 1967). Diagnostic groupings were also made according to systems of the body. Physical diseases, mental diseases, accidents or injuries and certain common operations were tabulated for each period of life according to chronicity and whether they had caused major disability. Major conditions occurring at or from birth included congenital disorders, immaturity or prematurity, birth injuries, and prenatal infection (congenital syphilis) (Table 20). Forty-four women each mentioned one medical problem and four women mentioned two problems occurring at birth. Permanent disabilities resulted from the first medical problem at birth in 16 women (3.4% of the sample).

For each problem in the preschool, school and post-school periods, the women were asked to state the frequency and duration of each medical problem, whether it caused a permanent disability, and if so, what disability resulted. This information was used to classify the medical problems into four groups: short-term (causing no permanent major disability; lasting less than six months; occurring no more than three

Table 20. Conditions reported present at or from birth, from the medical history interview. (In certain cases, where mental retardation made accurate histories impossible to obtain, information was obtained from the subject's physician.)

			No. of cases	Conditions reported/100 persons
Congenital infection (syphilis)			2	.4
Congenital anomalies:			36	7.7
Metabolic, nutritional	2	.4		
Mental retardation	7	1.5		
Central nervous system	1	.2		
Gastrointestinal tract	6	1.3		
Sensory (eye)	1	.2		
Circulatory (heart)	9	1.9		
Renal	2	.4		
Musculo-skeletal	6	1.3		
Skin	2	.4		
	36	7.7		
Birth injury			6	1.3
Prematurity			9	1.9
Total			53	11.3

times); recurrent (causing no permanent major disability; lasting less than six months; occurring three or more times during the time period); long-term without disability (causing no permanent major disability; lasting more than six months; not recurrent); and long-term with permanent major disability (any illness or injury which caused a permanent major disability was included here even if the original cause, such as an accident or polio, lasted less than six months).

During the pre-school period, the common medical problems were infections or complications of infections and injuries (Table 21). Short-term, recurrent and long-term physical diseases were encountered more frequently as causes of ill health than mental diseases or accidents. More conditions causing permanent disability were described than long-term illnesses without permanent sequelae (Table 21). Thirteen women (2.8% of the sample) reported that illness delayed their entrance into school.

For the school period, infections and the complications of infection such as rheumatic fever; injuries, accidents and acute surgical conditions such as appendicitis, accounted for most of the medical problems reported (Table 22). As in the pre-school period, the major cause of permanent disability was physical illness. Comparing the number of medical problems per subject at birth, in the pre-school and the school period, it was found that these increased with each time of life (Table 23). Nine women reported that they could not return to their regular school after specific illnesses or accidents (1.9% of the sample). Five women (2.4% of the sample) said that they left school permanently because they were sick, and six stated that leaving school was due to injury.

In the post-school period, common illnesses reported included mental health problems, physical disorders of presumably psychogenic origin, hypertension, varicose veins, gallbladder disease, hernia, pneumonia, infections of the kidney, appendicitis, female problems including complications of pregnancy, and arthritis. A wide variety of accidents were mentioned (Table 24). Common surgical procedures included tubal ligation, hysterectomy, D&C, appendectomy and cholecystectomy. The mean number of medical problems coded per subject for the post-school period was 2.4 (median 2.2) (Table 25). Long-term illnesses were reported more frequently than acute (short-term) or recurrent problems. Among a total of 463 reports of long-term physical illness, 136 were said to be associated with permanent major disability (Table 24). Result of long-term physical illness included hearing loss, poor vision, crippling or paralysis, late effects of accidents and operations, respiratory and cardiac limitation and mental health problems (Table 27). Disorders reported for the last year showed the same range of diagnostic classifications as for the post-school period (Table 26).

Among our women, the average total number of medical problems coded per subject was 4.36 (mode=2, median=3.87, minimum 0, maximum 15). However, a continuous condition such as diabetes which caused illness in more than one time period was counted once for each of the five periods in which it occurred.

Table 21. Medical conditions for the preschool period, from the medical history interview.

Diagnostic grouping and corresponding International Classification codes, by category	Number of conditions reported/100 persons (actual number of cases in parentheses)			
	Short-term problem[1]	Long-term or recurrent without permanent disability	Long-term causing permanent major disability	Duration or disability not reported
Infective and parasitic (000-136)	3.2 (15)	.6 (3)	1.1 (5)	.9 (4)
Neoplasms (140-239)	0 (0)	.2 (1)	.2 (1)	0 (0)
Metabolic, nutritional and endocrine (240-289)	0 (0)	1.1 (5)	0 (0)	0 (0)
Mental (290-315, 790-791)	0 (0)	0 (0)	1.5 (7)	0 (0)
Central nervous system (320-358)	0 (0)	1.1 (5)	.6 (3)	0 (0)
Sensory (360-389, 744)	1.1 (5)	1.5 (7)	.9 (4)	0 (0)
Circulatory (390-458, 747)	0 (0)	.2 (1)	.9 (4)	.2 (1)
Respiratory (460-519)	4.5 (21)	1.7 (8)	1.7 (8)	.4 (2)
Digestive system (520-577, 749-751)	.9 (4)	.4 (2)	.2 (1)	.2 (1)
Renal and urinary (580-599, 753)	0 (0)	.6 (3)	.4 (2)	0 (0)
Skin (680-709, 757)	.4 (2)	.6 (3)	.6 (3)	.2 (1)
Musculoskeletal (710-738, 755)	.4 (2)	.2 (1)	0 (0)	0 (0)
Symptoms and ill-defined (780-789, 796)	.2 (1)	.2 (1)	0 (0)	0 (0)
Accidents, injuries and late effects (800-999, E800-E999)	1.5 (7)	0 (0)	.6 (3)	.9 (4)
Total	12.2 (57)	8.5 (40)	8.7 (41)	2.8 (13)

Table continued on following page.

[1] Short-term was defined as lasting six months or less, not recurrent, and causing no permanent major disability (PMD); recurrent, as occurring more than three times during the time period, but causing no PMD; long-term, without disability, as lasting or causing a disability which lasted more than six months, but no PMD; and long-term with disability included any condition which caused a PMD.

Table 21 - continued.

Diagnostic grouping and corresponding International Classification codes, by cause	Number of conditions reported/100 persons (actual number of cases in parentheses)			
	Short-term problem[1]	Long-term or recurrent without permanent disability	Long-term causing permanent major disability	Duration or disability not reported
Infections (001,005,033,034,035, 043,055,079,090,320,360,361, 381,382,383,384,390,463,485, 486,510,590,595,683,720)	9.2 (43)	3.8 (18)	3.4 (16)	1.1 (6)
Accidents (813,816,823,847,884, 910,928,942,943,E929,E943)	1.5 (7)	0 (0)	.6 (3)	.9 (4)
Other (211,232,240,265,268,286, 310-312,343,345,347,373,379, 429,493,507,529,536,540,541, 580,691,708,724,744,747,749, 750,751,753,755,757,784,796)	1.5 (7)	4.7 (22)	4.7 (22)	.6 (3)
Total	12.2 (57)	8.5 (40)	8.7 (41)	2.8 (13)

Table 22. Medical conditions for the school period, from the medical history interview.

Diagnostic grouping and corresponding International Classification codes, by category	Number of conditions reported/100 persons (actual number of cases in parentheses)			
	Short term problem	Long-term or recurrent without permanent disability	Long-term causing permanent major disability	Duration or disability not reported
Infective and parasitic (000-136)	5.1 (24)	1.7 (8)	1.3 (6)	.4 (2)
Neoplasms (140-239)	.6 (3)	.4 (2)	.2 (1)	.2 (1)
Metabolic, nutritional and endocrine (240-289)	.2 (1)	1.1 (5)	.9 (4)	0 (0)
Mental (290-315, 790-791)	0 (0)	.2 (1)	1.5 (7)	0 (0)
Central nervous system (320-358)	.2 (1)	1.1 (5)	.6 (3)	0 (0)
Sensory (360-389)	.6 (3)	.9 (4)	1.5 (7)	.4 (2)
Circulatory (390-458)	.2 (1)	1.9 (9)	1.5 (7)	.4 (2)
Respiratory (460-519)	4.1 (19)	3.2 (15)	1.3 (6)	.4 (2)
Digestive (520-577)	8.3 (39)	1.9 (9)	.4 (2)	0 (0)
Renal and urinary tract (580-599)	.2 (1)	.6 (3)	.4 (2)	0 (0)
Gynecological and breast (610-678)	.2 (1)	.6 (3)	0 (0)	.2 (1)
Skin (680-709)	.9 (4)	.9 (4)	.4 (2)	0 (0)
Musculo-skeletal (710-738)	0 (0)	.4 (2)	.4 (2)	.4 (2)
Symptoms and ill-defined (780-789)	.2 (1)	.4 (2)	0 (0)	0 (0)
Accidents, injuries and their late effects (800-999, E800-E999)	7.5 (35)	1.9 (9)	2.8 (13)	.4 (2)
Total 61.8 (290)	28.3 (133)	17.3 (81)	13.2 (62)	3.0 (14)

Table continued on following page.

Table 22 - continued.

Diagnostic grouping and corresponding International Classification codes, by cause	Number of conditions reported/100 persons (actual number of cases in parentheses)			
	Short term problem	Long-term or recurrent without permanent disability	Long-term causing permanent major disability	Duration or disability not reported
Infections (1,11,34,38,43,44,46, 53,55,70,90,323,381,382,384, 390-392,463,466,485,486,490, 503,511,590,595,622,683,684)	11.1 (52)	7.0 (33)	3.6 (17)	1.5 (7)
Accidents (802,805,807,810,813, 816,818,821-823,826,828,836, 844,847,850,878,886,891,910, 913,914,916,921,926,941,946, 947,995,2817,2819,2880,2881, 2906,2924,2940,2943,2947,2969)	7.5 (35)	1.9 (9)	2.8 (13)	.4 (2)
Other (173,211,215,225,232,235, 240,242,244,246,250,277,281, 300,310-312,343,345-347,373, 374,378,427,429,493,507,529, 540-542,550,564-565,567,580, 592,615,626,682,691,696,708, 712,720,722,728,735,753,782, 785-787)	9.8 (46)	8.3 (39)	6.8 (32)	1.1 (5)
Total 61.8 (290)	28.3 (133)	17.3 (81)	13.2 (62)	3.0 (14)

Table 23. Numbers of medical problems per subject for each time period, from the medical history interview.

Time period	Mean number of conditions reported/100 persons
Birth	11.1
Preschool	30.5
School	60.3
Post-school	243.9
Last year	90.2

Table 24. Medical conditions reported in the post-school period, up to but not including the last year, from the medical history interviews of the 469 women, median age 42.6

Diagnostic grouping and corresponding International Classification[1] codes	Number of conditions reported/100 persons (actual number of cases in parentheses)		
	Short-term problem[2]	Long-term or recurrent without permanent disability	Long-term causing permanent major disability
Infective and parasitic diseases (000-136)	2.6 (12)	1.9 (9)	.6 (3)
Neoplasms (140-239)	7.7 (36)	7.0 (33)	.2 (1)
Metabolic, nutritional or endocrine (240-279)	2.1 (10)	6.8 (32)	3.4 (16)
Mental illness or deficiency (290-315, 790-791)	2.8 (13)	10.4 (49)	3.4 (16)
Central nervous system (320-358)	.9 (4)	3.2 (15)	1.7 (8)
Sensory (360-389)	2.1 (10)	1.7 (8)	2.3 (11)
Circulatory (390-458)	7.4 (33)	11.5 (54)	6.2 (29)
Respiratory (460-519)	8.1 (38)	5.5 (26)	3.2 (15)
Digestive system (520-577)	17.9 (84)	19.6 (92)	2.6 (12)
Renal and urinary tract (580-599)	5.1 (24)	4.5 (21)	1.5 (7)
Gynecological and breast (610-678)	31.3 (147)	10.7 (50)	1.3 (6)
Skin (680-709)	3.0 (14)	3.8 (18)	.4 (2)
Musculo-skeletal (710-738)	2.1 (10)	6.2 (29)	5.1 (24)
Symptoms and ill-defined (780-789)	.6 (3)	1.7 (8)	.2 (1)
Accidents, injuries, operations and their late effects (800-999, E800-E999)	9.8 (46)	7.0 (33)	4.5 (21)

[1] National Center for Health Statistics, 1967. 8th Revision, International Classification of Diseases, adapted for use in the United States. Public Health Service Publication No. 1693.

[2] For definition of short-term, long-term and recurrent medical problems, see footnote to table 21.

Table 25. Number of conditions reported per subject in the post-school period, excluding the last year, from the medical history interview.

Conditions	Number of women	Percent of sample
0	60	12.8%
1	97	20.7
2	111	23.7
3	86	18.3
4	58	12.4
5	30	6.4
6	15	3.2
7	6	1.3
8-11	6	1.3
Total	469	100.0%

Table 26. Medical conditions reported from the last year, from the medical history interview.

Diagnostic grouping and International Classification codes	Number of conditions/100 persons (actual number of cases in parentheses)	
Infective and parasitic (000-136)	.6	(3)
Neoplasms (140-239)	1.9	(9)
Metabolic, nutritional, and endocrine (240-289)	8.3	(39)
Mental (290-315, 791)	7.5	(35)
Central nervous system (320-358)	2.3	(11)
Sensory (360-389)	1.5	(7)
Circulatory (390-458)	9.6	(45)
Respiratory (460-519)	9.0	(42)
Digestive (520-577)	6.6	(31)
Renal and urinary (580-599)	5.1	(24)
Gynecological and breast (610-678)	7.5	(35)
Skin (680-709)	3.6	(17)
Musculo-skeletal (710-738)	11.1	(52)
Symptoms and ill-defined (780-790, 792-796)	2.8	(13)
Accidents, injuries and their late effects (800-999, E800-E999)	8.7	(41)
	86.1	(404)

Table 27. Reported prevalence of different types of permanent major disabilities, from the medical history interview

	No. of women	% of sample
Poor hearing	20	4.2%
Poor vision	14	3.0%
Crippled or paralyzed by disease	13	2.8%
Injury from accident or operation	55	11.7%
Respiratory disabilities	16	3.4%
Cardiac disability	32	6.8%
Chronic mental health problems (or mental retardation coded on physical)	20	4.3%
Other major chronic disability (e.g., diabetes, renal disease, epilepsy, etc.)	74	15.7%

(Percentages do not total to 100% because some women reported no permanent disabilities and others had multiple disabilities.)

Table 28. Number of medical problems reported that required a doctor's care at home (i.e., without hospitalization) (mean = 2.59, median = 2.10).

Number of problems	Number of women	Percent of sample
0	93	19.8%
1	89	19.0
2	88	18.8
3	63	13.4
4	52	11.1
5	31	6.6
6	21	4.5
7	15	3.2
8 or more	17	3.7
Total	469	100.0%

Table 29. Participation in programs for physical rehabilitation, from the medical history interview.

Number of medical problems for which rehabilitation was received	Number of women	% of sample
0	440	93.8
1	19	4.1
2	9	1.9
4	1	0.2
	469	100.0%

Table 30. Current medical complaints among the 469 women. (A check-list was read to the subjects and the positive responses recorded.)

Do any of the following symptoms bother you?

Symptom	Women answering yes	
Backache	54.4%	(255)
Headache	53.9	(253)
Breathlessness	43.5	(204)
Cramps in legs	40.3	(189)
Weight gain	39.2	(184)
Cough	35.8	(168)
Swollen ankles	34.3	(161)
Frequent urination	33.0	(155)
Hot flashes	32.8	(154)
Palpitations	32.6	(153)
Insomnia	39.9	(140)
Indigestion	27.1	(127)
Arthritis	25.4	(119)
Allergy	24.5	(115)
Stomach pain	22.8	(107)
Constipation	22.6	(106)
Chest pain	22.2	(104)
Rash	18.6	(87)
Incontinence	17.7	(83)
Weight loss	16.8	(79)
Menstrual irregularity	15.1	(71)
Flat feet	14.1	(66)
Diarrhea	10.0	(47)
Hair loss	7.2	(34)
Urinary infection	3.8	(18)
Paralysis	3.6	(17)
Prolapse	3.4	(16)
Skin ulcers	3.2	(15)
Fits	1.9	(9)

Do any of the following symptoms bother you? If so, how often?

	% of women (number of cases)		
Symptom	Never	Pre-menstruation or occasionally	Daily or frequently
Headache	31.6% (148)	42.0% (197)	26.4% (124)
Backache	36.9 (173)	37.3 (175)	25.8 (121)
Cramps	63.3 (297)	33.3 (156)	3.2 (15)
Nervousness	19.2 (90)	38.0 (178)	42.9 (201)
Faintness	82.7 (388)	15.1 (71)	1.7 (8)
Swollen ankles	63.1 (296)	22.6 (106)	13.9 (65)
Heartburn	64.0 (300)	23.0 (108)	13.0 (61)
Tiredness	23.9 (112)	27.5 (129)	48.6 (228)

Table 31. Variables correlated with number of nervous symptoms, with welfare status, and with education.

Variables correlated with number of nervous symptoms (headache, nervousness, insomnia and tiredness):

At the $\leq .001$ level:

Sedatives and/or tranquilizers currently taken, r = .33
Total number of diagnostic indices, physical exam, r = .19
Presence of disease, excluding accidents, physical exam, r = .18
Work limitation, physical exam, r = .21
Total number of disabilities, medical history, r = .24
Total number of medications taken now, r = .375
Disability from injury, medical history, r = .16
Other major disability, medical history, r = .19
Sum of weights, medical problems, whole medical history, r = .29
Sum of weights, medical problems, post-school, r = .34
Work status, 1971, r = -.15

At the $\leq .01$, $> .001$ level:

Mental illness or retardation, physical exam, r = .12
Musculo-skeletal diseases, physical exam, r = .12
Respiratory disability, medical history, r = .11
Sum of weights, medical problems, school, r = .11
Skill class, Civil Service, r = -.13
Total years of employment, r = -.11
Job class, Census Bureau, r = -.11
Employed husband present, r = -.11

At the $> .01$, $\leq .02$ level:

Education, grouped by highest grade completed, r = -.10

Variables correlated with welfare status, 1971 (1=not on welfare, 2=on welfare):

At the $< .001$ level:

Work status, 1971, r = -.18
Employed husband present, r = -.49
Marital status, r = -.40
Age of onset of visual disability, r = -.94 (among those with poor vision)

At the $< .01$, $> .001$ level:

Total years of employment, r = -.14
Sum of weights, medical problems at birth, r = .12
Presence of long term disease, physical exam, r = .12
Musculo-skeletal diseases, physical exam, r = .13

Table continued on following page.

Table 31 - continued.

At the < .02, > .01 level:

Skill class, Civil Service, r = -.10
Sum of weights, medical problems, preschool, r = .10
Total number of diagnostic indices, physical exam, r = .11
Height in inches, r = -.10

Variables correlated with education (grouped by highest grade completed):

At the < .001 level:

Number of pregnancies, r = -.16
Total years of employment, r = .20
Skill class, Civil Service, r = .24
Job class, Census Bureau, r = .27
Total years employed/years since age 16 or since left school, r = .16
Work status, 1971, r = .18

At the > .001, < .01 level:

Sum of weights, medical problems at birth, r = -.12
"Other" group of diseases, physical exam (includes gyn. problems), r = -.12
Height in inches, r = .12

At the > .01, < .02 level:

Work limitation, physical exam, r = -.10
Endocrine, nutritional and metabolic diseases, r = -.10
Presence of disease, excluding accidents, physical exam, r = -.10
Mental disability, medical history, r = -.10
Number of nervous symptoms, r = -.10

The mean number of times a woman was hospitalized for medical or surgical problems, not including uncomplicated childbirth, was 3.0 (mode=1, median=2.176, maximum=36). This is a minimum estimate in some cases, which were coded as only having been hospitalized one time in the time period if the subject could not remember how many times she had been in the hospital. The mean number of medical problems that the women recalled as needing a doctor's care at home was 2.6 (median=2.097 mode=0) (Table 28). Very few women with medical problems had been treated by rehabilitative measures (total 29) (Table 29).

The ten most frequent current complaints were backache, headaches, tiredness, breathlessness, nervousness, cramps in the legs, weight gain, cough, swollen ankles and hot flashes (Table 30). Most of these complaints can be related to poor physical condition, lack of exercise, neuroses or the menopause as well as obesity.

Certain variables from the medical history were correlated with welfare status: the more medical problems a women had had at birth and among those with visual disabilities, the earlier she had incurred these disabilities, the more likely she was to be welfare dependent. The greater the total number of disabilities cited in the medical history, the less likely a woman was to be working. Similarly the unemployed group had more current nervous symptoms (headache, insomnia, nervousness and tiredness). Mental disabilities from the medical history had a negative correlation with education and work.

Nervous symptoms were positively correlated with the total number of disabilities in the medical history, with disability from injury in the medical history, with other major disabilities cited (Table 31). They were also correlated with the work limitation estimated by the physician's judgement by physical examination.

Prescription Drugs and Home Remedies

Common drugs that were reported (Appendix A) as being taken on a regular basis included analgesics, mostly aspirin and aspirin-containing mixtures, sedatives and tranquilizers, medications taken for digestive disorders (antacids and compounds described as bowel medicine), diuretics (described by the respondents as fluid pills), medications taken for the control of obesity (described as diet pills), and hormones (described as medications for the control of menopausal symptoms). It is notable that many of these drugs were taken to relieve nervous symptoms or problems that could better be treated by regulation of the diet. Self-medication was common especially with respect to the use of analgesics and medicine used to relieve indigestion or constipation. Forty-three women took nutrient supplements, including vitamin preparations. Forty-nine women took birth control pills. Other medications consisted of prescription drugs which were taken for the control of specific diseases (Table 32, 33). Diuretics were taken significantly more frequently by women who were obese, either in an attempt to affect weight loss, or to treat hypertension (Table 34). Sedatives and tranquilizers, as might be expected, were taken more frequently by women with nervous symptoms; that is, those

Table 32. Reported type, duration and frequency of medications currently taken by the 469 women in the sample.

Number of women taking drugs in each category (Percent of total sample in parentheses):

Medication	One type	Two types
Kinds generally taken for symptomatic relief:		
Analgesics	252 (53.7%)	24 (5.1%)
Antacids	74 (15.8)	8 (1.7)
Bowel medicine	47 (10.0)	2 (.4)
Laxatives	30 (6.4)	
Sedatives or tranquilizers	92 (19.6)	37 (7.9)
Diuretics	60 (12.8)	1 (.2)
Antiobesity drugs	51 (10.9)	2 (.4)
Hormones	31 (6.6)	1 (.2)
Kinds taken to treat or control specific conditions:		
Digitalis or other cardiac medication	7 (1.5)	
Antihypertensives	24 (5.1)	
Antihistamines	27 (5.8)	4 (.9)
Anticonvulsants	9 (1.9)	
Insulin or oral hypoglycemic agents	13 (2.8)	2 (.4)
Antibiotics or sulfa drugs	17 (3.7)	1 (.2)
Topical medication	1 (.2)	1 (.2)
Other		
Nutrient supplements	37 (7.9)	6 (1.3)
Birth control	49 (10.4)	

Table 32 continued on following page.

Table 32, continued. Reported frequency of medication intake.

Medication	Not taken	Occas.	Pre-menstrual	Once a day	Greater than 1/day	Taken as needed	Taken as prescribed	Other regular interval
Analgesics	193 (41.2%)	184 (39.2%)	1 (.2%)	21 (4.5%)	44 (9.4%)	17 (3.6%)	4 (.9%)	4 (.9%)
Antacids	385 (82.1)	38 (8.1)		6 (1.3)	19 (4.1)	11 (2.3)	2 (.4)	3 (.6)
Bowel medicine	420 (89.6)	23 (4.9)		6 (1.3)	10 (2.1)	5 (1.1)		4 (.9)
Laxatives	438 (93.4)	17 (3.6)		2 (.4)	3 (.6)	4 (.9)		3 (.6)
Sedatives or tranquilizers	340 (72.5)	21 (4.5)	1 (.2)	17 (3.6)	61 (13.0)	20 (4.3)	5 (1.1)	4 (.9)
Diuretics	408 (87.0)	4 (.9)	7 (1.5)	22 (4.7)	10 (2.1)	5 (1.1)	1 (.2)	12 (2.6)
Antiobesity drugs	416 (88.7)	4 (.9)		32 (6.8)	16 (3.4)			
Hormones	437 (93.2)		4 (.9)	10 (2.1)	4 (.9)	3 (.6)		11 (2.3)
Digitalis or other cardiac medication	462 (98.5)			2 (.4)	2 (.4)	2 (.4)		1 (.2)
Antihypertensives	445 (94.9)	1 (.2)		13 (2.8)	8 (1.7)			2 (.4)
Antihistamines	438 (93.4)	7 (1.5)		5 (1.1)	10 (2.1)	5 (1.1)	1 (.2)	3 (.6)
Anticonvulsants	460 (98.1)				9 (1.9)			
Insulin or oral hypoglycemic agents	454 (96.8)			9 (1.9)	6 (1.3)			
Antibiotics or sulfa drugs	451 (96.2)	2 (.4)		2 (.4)	13 (2.8)		1 (.2)	1 (.2)
Topical medication	466 (99.4)	2 (.4)					1 (.2)	
Nutrient supplements	425 (90.6)	3 (.6)		28 (6.0)				

Table 32 continued on following page.

Table 32, continued. Reported length of time medication has been taken (Percent of total sample in parentheses)

Medication	Not taken	1 Month or less	1 Year or less	5 Years or less	10 Years or less	Greater than 10 years	Unknown
Analgesics	193 (41.2%)	3 (.6%)	37 (7.9%)	55 (11.7%)	43 (9.2%)	34 (7.2%)	16 (3.4%)
Antacids	385 (82.1)	4 (.9)	13 (2.8)	21 (4.5)	15 (3.2)	3 (.6)	2 (.4)
Bowel medicine	420 (89.6)						
Laxatives	438 (93.4)		4 (.9)	6 (1.3)	5 (1.1)		1 (.2)
Sedatives or tranquilizers	340 (72.5)	9 (1.9)	40 (8.5)	52 (11.1)	9 (1.9)	7 (1.5)	
Diuretics	408 (87.0)	5 (1.1)	20 (4.3)	23 (4.9)	5 (1.1)	2 (.4)	1 (.2)
Antiobesity drugs	416 (88.7)	11 (2.3)	22 (4.7)	9 (1.9)	4 (.9)	4 (.9)	
Hormones	437 (93.2)	2 (.4)	15 (3.2)	9 (1.9)	3 (.6)	1 (.2)	
Digitalis or other cardiac medication	462 (98.5)	1 (.2)		4 (.9)		1 (.2)	
Antihypertensives	445 (94.9)		9 (1.9)	7 (1.5)	4 (.9)	2 (.4)	
Antihistamines	438 (93.4)	2 (.4)	7 (1.5)	12 (2.6)	3 (.6)	3 (.6)	1 (.2)
Anticonvulsants	460 (98.1)	1 (.2)	2 (.4)	1 (.2)	2 (.4)	3 (.6)	
Insulin or oral hypoglycemic agents	454 (96.8)	1 (.2)	4 (.9)	8 (1.7)		2 (.4)	
Antibiotics or sulfa drugs	451 (96.2)	8 (1.7)	3 (.6)	2 (.4)	2 (.4)	2 (.4)	1 (.2)
Topical medication	466 (99.4)				1 (.2)		
Nutrient supplements	425 (90.6)	5 (1.1)	18 (3.8)	5 (1.1)			

Table 33. Were the medications prescribed by a doctor? (Percentages refer to the proportion of women taking this type of drug who gave this answer).

	No	Yes, some	Yes, all
Analgesics	80.2%	6.8%	12.9%
Antacids	61.8	5.3	32.9
Bowel medicine	55.8	2.3	41.9
Laxatives	92.6	0	7.4
Sedatives or tranquilizers	3.1	0	96.9
Diuretics	1.7	0	98.3
Antiobesity drugs	3.8	1.9	94.3
Hormones	0	0	100.0
Digitalis or other cardiac medications	0	0	100.0
Antihypertensives	0	4.2	95.8
Antihistamines	10.3	3.4	86.2
Anticonvulsants	0	0	100.0
Insulin or oral hypoglycemic agents	0	0	100.0
Antibiotics	0	0	100.0
Topical medications	50.0	50.0	0.0
Nutrient supplements	48.8	4.9	46.3

Table 34. Association between obesity (triceps skinfold > 30 mm) and the taking of diuretics, among the 461 women who were not pregnant (Kendall's tau b = 0.14, P < .0001).

Triceps skinfold	Not taking diuretics		Taking diuretics		Total
$\leq$ 30 mm	169	(92.9%)	13	(7.1%)	182 (100.0%)
> 30 mm	232	(83.2%)	47	(16.8%)	279 (100.0%)
	401	(87.0%)	60	(13.0%)	

who complained of frequent headaches, insomnia, nervousness and undue tiredness (Table 35). Diet pills such as amphetamines were taken more frequently by obese women (Table 36).

Comparing our population with that of the U.S. at large, certain differences emerge with respect to habits of drug intake. During the year July 1964-June 1965, based on data from household surveys, a relevant condition, that is, a defined diagnosis, was reported for about 79 percent of prescription drugs taken; an additional 12 percent of the reported prescriptions could be classified by the symptom that was being treated, leaving approximately 9 percent of the total with no associated condition or symptom reported. (Prescribed and Non-prescribed Medicines. Vital and Health Statistics. Series 10, No. 39, U.S. Dept. Health, Education and Welfare, Washington, D.C., Oct. 1967).

In our population approximately 76 percent of medicines reported were taken for the relief of symptoms, 14 percent were taken for the control or treatment of defined conditions, and of these, 42 percent were taken for the control of obesity. The remaining 10 percent of medicines taken included nutrient supplements and birth control pills; most of the nutrient supplements were not taken for the relief of any specified symptoms. These differences may in part be attributed to the forms of data collection and tabulation, but among the women whom we interviewed, the habit of taking medicines to alleviate ill-defined or psychosomatic complaints was strong. Our women were also given to self-medication, a reflection not only of their cultural pattern, but also of their mistrust of physicians and their past or present inability to obtain adequate medical advice.

From our analysis of Medicaid data, we were able to compute the mean annual cost of prescribed medications per subject for the years 1968-1971, inclusive (Table 37). While these expenditures increased only very slightly from year to year within this period, our women had larger expenses for these medications than women within the 1964-1965 national survey. These differences are not the result of inflation. In this national survey, the average cost of prescribed medications per female per year was $18.40 for the age group 25-44 years, and $29.00 for the age group 45-64 years, whereas for our women with a median age of 42.6 years, the average cost of prescribed medications for the year 1968 was $47.30. However, some of this difference may be explained by administrative costs of Medicaid charges. Looking at these figures in a different way, it can be stated that our women had prescription costs similar to those of the older of the two cited groups of women in the national survey. This appears to be one example, and there were several in our study, of the tendency for these low income women to show characteristics which may be the norm for an older U.S. population. In explaining our women's medication habits, it is suggested that either through ignorance, through long-term medical neglect, through belief in medicines as a substitute for physical rehabilitation, through inability to obtain adequate advice on health maintenance or through a combination of these factors, palliative remedies were used as a crutch to withstand health problems intimately related to socioeconomic deprivation.

Table 35. Association between the number of nervous symptoms (headaches, insomnia, nervousness and tiredness) and the taking of sedatives and tranquilizers, omitting those women who were taking two drugs in this category (Kendall's tau c = 0.25, $P < .0001$).

Number of Nervous Symptoms	Not taking sedatives	Taking a sedative	Total
0	86 (92.5%)	7 (7.5%)	93 (100.0%)
1	93 (85.3%)	16 (14.7%)	109 (100.0%)
2	87 (79.1%)	23 (20.9%)	110 (100.0%)
3	53 (61.6%)	33 (38.4%)	86 (100.0%)
4	21 (61.8%)	13 (38.2%)	34 (100.0%)
	340 (78.7%)	92 (21.3%)	

Table 36. Association between obesity (triceps skinfold > 30 mm) and the taking of antiobesity drugs (amphetamines, thyroid hormone, etc.) among the non-pregnant women (Kendall's tau b = .08, $P = .004$).

Triceps skinfold	Not taking antiobesity drugs	Taking antiobesity drugs	Total
≤ 30 mm	167 (91.8%)	15 (8.2%)	182 (100.0%)
> 30 mm	241 (86.4%)	38 (13.6%)	279 (100.0%)
	408 (88.5%)	53 (11.5%)	

Table 37. Per capita Medicaid expenditures for pharmacy charges and total medical expenses among those women who had some Medicaid expenses in a given year.

Year	Mean pharmacy charges	Mean pharmacy charges in 1967 dollars	Consumer price index for drugs[1] (1967 CPI=100)	Mean total medical expense	Mean total medical expense in 1967 dollars	Consumer price index for medical expenses[1]	Ratio of drugs/ medical expense, both in 1967 dollars
1968	$47.30	$47.21	100.2	$277.95	$261.97	106.1	18%
1969	49.97	49.33	101.3	272.72	240.49	113.4	21%
1970	59.50	57.43	103.6	275.50	228.44	120.6	25%
1971	66.41	63.01	105.4	280.59	218.53	128.4	29%

[1] Source: Bureau of Labor Statistics, 1971. Handbook of Labor Statistics; and Monthly Labor Review, February, 1972.

Table 38. Responses to "Have you ever taken birth control pills?".

	No. of women	% of sample
No	259	55.7
Yes	206	44.3
No response	4	--
	469	100.0%

Table 39. Responses to "Are you taking birth control pills now?".

	No. of women	% of sample
No, but have taken them	156	33.3
Yes	49	10.4
Never took them	259	55.2
No response	5	1.1
	469	100.0%

Table 40. Total length of time, in months, that the respondent reported she had ever taken birth control pills.

Number of months	No. of women	% of those who had ever taken the pill	% of Total sample
0	264	-	56.3
1	11	5.4	2.3
2-5	39	19.3	8.4
6-11	18	8.9	3.7
12-23	28	13.9	6.0
24-35	19	9.4	4.1
36-47	18	8.9	3.9
48-59	14	6.9	3.0
60-71	26	12.9	5.4
72-83	13	6.4	2.7
84-95	11	5.4	2.3
96-107	3	1.5	0.6
108-119	1	0.5	0.2
120-131	1	0.5	0.2
133	1	0.5	0.2
Unknown	2	-	0.4
	469	100.0%	100.0%

Table 41. Reasons given for stopping use of birth control pills, among the 206 women who had ever taken them

		No. of women	% of those who had ever taken the pill
Still taking oral contraceptives		49	23.8%
Had stopped taking oral contraceptives		157	76.2%
Reasons given for stopping oral contraceptives:			
Medical side-effects		61	29.6%
Edema or weight gain	8		
Breakthrough bleeding or menorrhagia	19		
Phlebitis or thrombophlebitis	9		
Doctor's orders	11		
Nausea	9		
Chest pain, lost weight	2		
Uterine polyps	1		
Uterus enlarging	1		
Allergy	1		
Nerves or headache		23	11.1%
Medical use (non-contraceptive)		9	4.4%
No reason given, or don't know		16	7.7%
Couldn't obtain or couldn't afford		5	2.4%
Read articles or heard about possible side-effects		9	4.4%
Didn't need (no partner, menopause, or hysterectomy)		28	13.5%
Changed method		5	2.4%
Forgot them		1	0.5%
			76.2%

While our women believed in the efficacy of drugs for the relief of sickness, whether physical or psychosomatic, most of them did not use drugs for birth control. A few may have been prejudiced against the use of drugs for this purpose. However, others either did not tolerate oral contraceptives without side effects, or had prior contraindications to their use. Of the total sample, 206 women had taken contraceptive steroids (the Pill) at one time or another, but only 49 were taking the Pill at the time of the study (Tables 38, 39). The mean number of months that women in the sample had remained on the Pill was 32.6 (median 23.6) (Table 40). When asked why they stopped taking the Pill, 39 percent of 157 women who had stopped taking the Pill gave valid medical reasons, including specific side-effects and their physicians' orders (Table 41). Another 15 percent (23) mentioned nerves or headache as a reason for discontinuing the Pill. Although this association may have been imaginary, there is some evidence that vitamin B_6 deficiency, due to intake of contraceptive steroids, may induce mental symptoms. In addition, 27 percent gave valid non-medical reasons (desired pregnancy, didn't need because of hysterectomy, menopause, loss of partner, etc.). Finally, 20 percent gave various more dubious responses (couldn't obtain, couldn't afford, forgot them, no reason given, read about possible side-effects). Even among those women who continued to take the Pill, some evidence of possible folic acid deficiencies induced by the Pill appeared in the hematological results. (See the section on laboratory tests.) The health problems that were particularly prevalent in the sample included some that represent contraindications to prescription of the Pill (hypertension, varicose veins with thrombophlebitis, diabetes, edema, etc.). Presently available oral contraceptives do not seem to be the optimal method of family planning for many of these women.

Diet History

"Dietary assessment is the evaluation of the energy value and nutrient content of food eaten. A knowledge of the nutritional value of the diet (*as recalled*) of an individual does not and cannot give an assessment of that person's nutritional status. In the *final* analysis, nutritional status can only be determined clinically." [Emphasis added.] (Disselduff, M. M. The role of nutritional status. In *Nutritional Deficiencies in Modern Society*. Eds. Howard, A. N. and McLean Baird, I. Food Education Society. Newman Books Ltd. 1973, p. 98).

It has been pointed out by Disselduff and others that dietary histories are difficult to evaluate because descriptive items must be quantified before nutrients can be calculated. Assumption is made on the part of the interviewer that the subjects' recall of foods eaten is realistic.

When diet histories were obtained during this study, attempts were made to assess the quantity of foods eaten or beverages consumed by provision of household measures and food models. Subjects were asked to identify those closest in size to the portion taken. Previous experience that visual identification is notoriously unreliable was borne out

Table 42. Correlations and partial correlations with total number of calories recalled, from the 24-hour diet recall (see text for explanations)

	SIMPLE CORRELATIONS	PARTIAL CORRELATIONS		
Total calories in diet recall:		Controlling for education	Controlling for skinfold thickness	Controlling for education and skinfold thickness
with education	r = 0.1903, p< .001	----	r = 0.1882, p <.001	---
with years employed in last 10	r = 0.1428, p< .001	r = 0.1187, p = .005	r = 0.1298, p <.003	r = 0.0953, p = .021
with employment status	r = 0.1786, p< .001	r = 0.1605, p < .001	r = .1628, p <.001	r = 0.1336, p = .002
with skinfold thickness	r = -0.1998, p< .001	r = -0.1978, p <.001	---	---

by our field experience. Women found it difficult to remember the amount of a food they had eaten during the previous 24 hours. Analysis of data also suggests that our subjects "forgot" to mention certain foods, perhaps snacks, which they preferred to delete from their memories because they were "on a diet" or they gave information which they thought would be desired by the interviewer.

Some of the significant correlations with diet recall variables (Table 42) raise important methodological questions concerning what is actually measured by the 24-hour recall. The total calories recalled showed significant positive correlations with education, employment status, and years employed in the last 10; and a significant negative correlation with triceps skinfold thickness.

The correlation between total calories recalled and years employed in the last ten could be partially explained by the effects of education on both variables. Similarly, the more obese women, who had been employed fewer years in the last ten, recalled fewer total calories; but this accounted for only a small amount of the correlations (a drop from r=0.1428 to r=0.1298). The strong negative correlation between triceps skinfold thickness and total calories recalled (r = -.1998) was entirely independent of the effect of education (r between skinfold thickness and total calories, correcting for education = -.1978).

These relationships may be explained by the effect of education on the subject's mnemonic ability, and possibly on her habits of accuracy and honesty. The remaining correlation with the employment variables after the correction for education probably reflects several further factors, such as: the effect of employment in encouraging more organized, and hence more easily remembered eating habits; better health, and hence better appetites; better motivation to answer accurately.

The negative correlation between skinfold thickness and calories recalled is more difficult to explain. It may relate to a perceptual disability of the obese subjects.

As a whole, these relationships point to the necessity for extreme caution in accepting the results of a dietary recall, at least among low-income women, at face value. In view of the unreliability of the diet recall with respect to total calories, the calculations of nutrient intake, viz. protein, fat, carbohydrates, vitamins and minerals have been omitted from this report as they too would be unrealistic.

Reproductive Histories

1. Pregnancies, abortions and infant mortality

It was characteristic of the women in the sample to have had many pregnancies and large families. For each woman, the mean number of pregnancies was 6.2 (median 5.9, minimum 1, maximum 18) (Table 43). The mean number of children (not adopted) was 5.1 (median 4.9, minimum 1, maximum 14) (Table 44). The mean age at first pregnancy was 20.3

Table 43. Number of pregnancies per subject.

Number of pregnancies	Number of women	Percent of sample
1	11	2.3%
2	21	4.5
3	41	8.7
4	59	12.6
5	75	16.0
6	72	15.4
7	69	14.7
8	38	8.1
9	28	6.0
10	21	4.5
11	13	2.8
12	7	1.5
13	3	0.6
14	5	1.1
15	2	0.4
16	2	0.4
17	1	0.2
18	1	0.2
Total	469	100.0%

Table 44. Number of living children, not adopted, per subject.

Number of children	Number of Women With This Size Family	Percent of Sample
1	17	3.6
2	36	7.7
3	63	13.4
4	84	17.9
5	83	17.7
6	67	14.3
7	56	11.9
8	30	6.4
9	16	3.4
10	11	2.3
11	2	0.4
12	2	0.4
13	1	0.2
14	1	0.2
Total	469	100.0

years (median 19.4, range 13 to 40). Numerical differences between the number of pregnancies and the number of children per woman are accounted for by the number of abortions, stillbirths and infant mortality. There was only one mention of illegal abortion and one mention of an abortion obtained under the dispensation of the New York State liberalized abortion law passed in 1970. However, interviewers were of the opinion that this was a matter of reticence rather than reality. It is assumed for the purposes of this report that the term "abortion" should be used to cover spontaneous, illegal, legal and therapeutic abortions, including in the latter category those performed in the case of tubal pregnancies. This is in accordance with usual medical usage.

The total number of abortions for our population was 136 per 1,000 pregnancies (13.6%). The number of stillbirths was 14 per 1,000 pregnancies (1.4%), neonatal deaths (those infants born alive that died before 28 days of age) 17.7 per 1,000 live births (1.8%), and the infant mortality (all those born alive that died before one year of age) 26.9 per 1,000 live births (2.7%). Among the live births, 46.4 infants per 1,000 were described as being "abnormal", a term used to describe congenital defects, birth injuries and immaturity (Table 45).

Adverse pregnancy outcome and fetal loss has been reported for study populations from New York City and New York State communities (Shapiro, S. and Abramowicz, M. 1969, Pregnancy outcome correlates identified through medical record based information. Amer. J. Public Health 59: 1629). From this total population of 11,630 women, fetal deaths were 153 per 1,000 pregnancies, a figure comparable to ours. It was shown in this study that gravidity (number of previous pregnancies) as well as the age of the mother were directly related to adverse pregnancy outcome. Total fetal deaths per 1,000 pregnancies was 191.6 for women who had had 4 or more pregnancies, so our combined figures for abortion and stillbirths of 150 per 1,000 pregnancies are not excessive, compared to the New York State range for 1958-1960 when Shapiro's investigation was carried out, and when many of the women in our study were pregnant.

According to Wright (Wright, N. H. 1972, Some estimates of the potential reduction in the United States infant mortality rate by family planning. Amer. J. Public Health 62: 1130), the vast majority of married women in the United States report their desired family size as lying between 2 and 4 children. Infant mortality data for 1960 show that for all maternal ages, the rates increase with the total number of live births but most steeply for families in which there are 4 or more children. Selecting from the 1960 infant mortality data (Chase, H. 1970, A study of infant mortality from linked records: Method of study and registration aspects. National Center for Health Statistics, Series 20, #7), a maternal age range corresponding to the median for our population at that time (30-34 years), the infant mortality rate for that total group was 23.7 per 1,000 live births and for those having had 5 or more children, 23.6 per 1,000 live births. It should be noted that in these same vital statistics, it is shown that for women between 30

Table 45. Pregnancy outcome and infant mortality among the 469 women in the sample.

Number pregnancies = 2901
Number multiple births = 22 (apparently 2 sets triplets)

2923	Potential births
394	Spontaneous or therapeutic abortions
40	Stillbirths
434	Fetal wastage
2925	
-434	
2491	Live births
44	Died before 28 days (neonatal)
23	Died 29 days to 1 year (postnatal)
67	Infant Mortality

Infant mortality (born alive, died age less than 1 yr.)	67/2491 = 26.9 per 1000 live births
Abortions	394/2901 = 136 per 1000 pregnancies
Stillbirths	40/2901 - 14 per 1000 pregnancies
Neonatal deaths	44/2491 - 17.7 per 1000 live births
"Abnormal children"	115/2491 - 46.4 per 1000 live births or 4.64%

and 34 years, having 6 or more children, the infant mortality rate was 33.5 per 1,000 live births. The overall infant mortality rate for the United States for 1960 was 25.1 per 1,000 live births.* These national statistics refer to total infant mortality rates: that is, deaths of infants under 1 year of age. Comparing our population with the U.S. population it can be seen that infant mortality rates within our sample are within the range of large U.S. families. In white families, neonatal mortality rates (1960) for the U.S. were 16.9 per 1,000 live births, a figure similar to our findings (Chase, H. C. 1969, Infant mortality and weight at birth: 1960 United States birth cohort. Amer. J. Public Health 59: 1618).

2. Completed family size

For our women the only unqualified determinant of completed family size was that they are incapable of bearing children. We could accept that women who had had tubal ligations, hysterectomies or who had passed through a physiological menopause would have no more children unless they adopted them. Using these determinants, 219 women had completed their families, with a mean number of children of 5.2 (median 5.3, range 1 to 10). Seventy-eight women had had tubal ligations at a mean age of 32 (median 31.8, range 21-45 years). Sixty-eight women had had hysterectomies at a mean age of 37 (median 36.6, range 26-51 years). Eighty-five women had reached the menopause other than as a result of hysterectomy. The mean age of the menopause was 44.8 (median 44.8, range 31-53 years) among these 85 women; these were, however, the first women in the group to reach menopause, and a longitudinal study would undoubtedly obtain a higher mean age.

3. Family planning

Family planning was notable by its total inadequacy. It appeared that the only really effective contraception was by tubal ligation or hysterectomy. While 206 women said that they had taken contraceptive steroids (the Pill) at one time or another, only 49 were taking these drugs at the time of the study. Ninety percent of the women (422) said that they had never received advice from a family planning service, and only 23 (4.9%) women had had such advice in the last year (Table 46).

4. Correlates of pregnancy and family size

The age at first pregnancy was related negatively to education, as was the abortion rate.

The more pregnancies and the more children a woman had, the less likely she was to be employed. The more pregnancies a woman had, the more likely she was to be on welfare. Finally, the more pregnancies and the

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*The U.S. 1964-66 infant mortality rates for all incomes was 23.0 per 1,000 live births, and over these same years infant mortality for white infants, living in non-metropolitan areas in the northeast was 21.3 for all incomes and 22.3 for those with annual incomes between $3,000 and $4999. (Infant Mortality Rates: Socioeconomic Factors, United States. National Center for Health Statistics, Series 22, No. 14, p. 29).

Table 46. Responses to question on whether respondent had obtained advice from a family planning service.

When obtained	Number of Women	Percent of Sample
Never	422	90.4%
More than 5 years ago	7	1.5
In last 5 years	15	3.2
In last year	23	4.9
No response	2	-
Total	469	100.0%

more children a woman had, the less time she was likely to have worked since age 16 or since leaving school. We must conclude that for women in low-income groups, frequent pregnancies and large families are major causes of unemployment. Welfare dependence will result unless there is a working husband in the home who can support them all.

Physical Examination

Examination of the women included inspection, survey of the functional integrity of body systems, measurement of limbs, detection of gross abnormalities, determination of blood pressure, anthropometric measurements (weight, stature and triceps skinfold thickness), electrocardiographic recording as well as visual and auditory acuity tests. Abnormal findings were classified by appearance, signs of disease, anatomical or functional loss, diagnostic indices, disability and need for rehabilitation.

The most common abnormal physical signs detected by appearance were dermatoses (rashes), musculoskeletal deformities including arthritis, varicose veins, disease of the outer or middle ear, and goiter. Frequent evidences of congenital or acquired disease detected by clinical survey of systems included adventitial respiratory sounds, heart murmurs, partial paralysis and tremor. Loss or partial loss of function, related to the limbs or back was found not only in women with musculoskeletal deformity or paralysis but also in those with back syndromes and post-traumatic stiffness of the arms or legs whereby full movement was lost (Table 47).

Common diagnostic indices contributing to disability, according to the international classification, included metabolic and nutritional disease (43 women including 27 with very gross obesity), diseases of the circulatory system (83 women including 42 with hypertension plus clinical evidence of heart disease), diseases of the musculoskeletal system (33 women including 16 with arthritis), diseases of the skin (28 women including 19 with dermatitis), late effects of injuries (30 women including 22 whose disability was related to an accident), diseases of the respiratory system (27 women including 21 with evidence of chronic bronchitis, emphysema or asthma), abnormalities of the sensory organs (45 women including 21 with diseases of the eyes and 24 with diseases of the ear) and psychiatric disorders (30 women including 23 with obvious psychoses or neuroses and 7 with evidence of mental retardation) (Table 48).

From the physical examination it was found that 119 women (25.4% of the sample) had evidence of long-term disease and 36 women (7.7% of the sample) had evidence of recurrent disease (Table 49). One medical condition was present, contributing to disability in each of 167 women (35.6% of the sample), and in 90 women (19.2% of the sample), two or more medical conditions contributed to disabilities (Table 50).

For this study the normal range of blood pressure was less than 140 mmHg for the systolic and less than 90 mmHg for the diastolic.

Table 47. Occurrence of physical signs from medical examination

			No. of women	% of sample
Rash			87	18.7%
Musculo-skeletal deformity			70	14.9
Site: One arm	5	1.1%		
One leg	12	2.6		
Two arms	12	2.6		
Two legs	17	3.6		
Both arms, legs	1	0.2		
Back	19	4.1		
Head	2	0.4		
Head, two legs	1	0.2		
Loss of function			50	10.7
Site: One arm	12	2.6		
One leg	9	1.9		
Arm and leg	1	0.2		
Two legs	4	0.9		
Back	15	3.2		
Back, two limbs	1	0.2		
Back, one limb	3	0.6		
Varicose veins			44	9.4
Middle ear disease			36	7.7
Rales and lung sounds			32	6.8
Goiter			28	6.0
Heart murmur			28	6.0
Cough			27	5.8
Partial paralysis			18	3.8
Site: One arm	4	0.9		
One leg	6	1.3		
Arm and leg	3	0.6		
Both arms, leg	1	0.2		
Two legs, arm	1	0.2		
Tremor			15	3.2
Outer ear dermatitis			13	2.8
Neck scars			13	2.8
Mucosal changes			11	2.3
Chest deformity			9	1.9
Limb shortening			9	1.9
Site: One arm	1	0.2		
One leg	8	1.7		
Angular stomatitis			7	1.5
Stammer			7	1.5
Cyanosis			6	1.3
Breathlessness			6	1.3
Other hernia (not inguinal)			5	1.1
Facial paralysis			5	1.1
Prosthesis worn			3	0.6
Hair loss			2	0.4
Irregular pulse			1	0.2
Lung consolidation			1	0.2
Inguinal hernia			1	0.2

Table 48. Medical conditions contributing to disability, from the physical examination, and common diagnostic indices included in each category.

Diagnostic grouping and corresponding International Classification codes	No. of cases found/100 persons (Actual no. in parentheses)	
Infective and parasitic (000-136)	.9%	(4)
Neoplasms (140-239)	.2	(1)
Metabolic, nutritional and endocrine (240-289)	9.2	(43)
Gross obesity (277)	5.7	(27)
Mental (290-315, 790-791)	6.6	(31)
Psychoses or neuroses (290-309, 790-791)	5.1	(24)
Retardation (310-312, 315)	1.5	(7)
Central nervous system (320-358)	4.3	(20)
Sensory (360-389)	9.6	(45)
Eye diseases (360-379)	4.5	(21)
Ear diseases (380-389)	5.1	(24)
Circulatory (390-458)	17.7	(83)
Clinical hypertensive disease (400-404)	9.0	(42)
Respiratory (460-519)	5.8	(27)
Bronchitis, emphysema and asthma (490-493)	4.5	(21)
Digestive system (520-577)	1.7	(8)
Renal and urinary tract (580-599)	.9	(4)
Skin (630-708)	6.0	(28)
Dermatitis (690-692)	4.1	(19)
Musculo-skeletal (710-738)	7.0	(33)
Arthritis (712-715)	3.4	(16)
Symptoms and ill-defined (780-789)	1.7	(7)
Accidents, injuries and their late effects (800-999, E800-E999)	6.4	(30)
Accidents (835-953, E940-E946)	4.7	(22)
Temporary prevention of employment due to pregnancy or recent operation	1.3	(6)

(No gynecological examination was performed.)

Table 49. From the physical examination: number of women with long-term or recurrent diseases. Long-term diseases include tuberculosis, cerebral palsy, epilepsy, emphysema, chronic bronchitis, chronic nephritis, arthritis, all heart disease, hypertension, cerebrovascular disease, varicose veins, eye diseases, Meniere's disease, Addison's disease, myxedema, diabetes, multiple sclerosis. Mental illness not included. Recurrent diseases include asthma, bronchitis, peptic ulcers, renal infections, dermatoses, migraine, phlebitis and thrombophlebitis, colitis, and bursitis.

	No. of women	% of sample
Long-term physical diseases found on examination	119	25.4%
Recurrent diseases diagnosed	36	7.7

Table 50. Number of medical conditions found on the physical examination that contributed to disability, for each subject.

	No. of women	% of sample
No significant conditions	212	45.2%
One	167	35.6
2	66	14.1
3	23	4.9
4	1	0.2
	469	100.0%

For the sample, the mean systolic blood pressure was 138 (median 132, range 90-230 mmHg) (Table 51). The mean diastolic pressure was 89 (median 88, range 60-140 mmHg) (Table 52). Borderline hypertension, that is, a systolic pressure greater than 140 but less than 160 mmHg and a diastolic pressure less than 95 but equal to or greater than 90 mmHg was found in 111 women (23.7% of the sample). Hypertension, that is a systolic pressure equal to or greater than 160 mmHg or a diastolic pressure equal to or greater than 95 mmHg, was found in 152 women (32.4% of the sample).

Analysis of the electrocardiograms showed that 52 women (11.4% of the sample) had left axis deviation. Left axis deviation, a term used to describe variation in the electric axis of the heart, occurs when the heart is displaced upwards and lies horizontally, as is the case in obese persons with excess abdominal fat. Abnormal left axis deviation occurs when there is a preponderant enlargement of the left ventricle of the heart as in chronic hypertension (White, P.D. 1947, Heart Disease. MacMillan Co., New York, pp. 194-199).

The cardiologist who examined the EKG tracings labelled them as showing left axis deviation if he considered the axis to be outside the normal range in terms of the patient's weight for height, but he agreed that if the subject had very marked displacement of the heart due to abdominal fat, it was not possible to differentiate such cases from those in which left axis deviation was due to left ventricular enlargement. In 22 women (4.5% of the sample) the electrocardiographic tracings were labelled as "possibly abnormal" because of changes in the P, QRS, or T waves and intervals, in one or more leads, suggesting disease rather than physiological variation. These changes were not characteristic for specific forms of cardiac block or damage. In another 22 women, defined electrocardiographic abnormalities were found including bundle branch block, evidence of past coronary infarcts and conduction defects due to such conditions as rheumatic heart disease (Table 53).

The mean forced vital capacity in cubic centimeters (cc) was 2655.7 (range 1000-4300 cc). Expressed as a percentage of the normal forced vital capacity, adjusted for stature, the mean value was 83.4%, standard error 0.82 (range 30.8-138.7 percent) (Table 54).

Both visual and auditory acuity tests were carried out with the objective of showing whether or not impairments existed that would cause a work limitation. Sixteen women (3.4% of the sample) tested without glasses had an acuity of 20-50 or worse in both eyes and 33 women (7.1% of the sample) had an acuity of 20-50 or worse in one eye when tested under the same circumstances. These women either had no glasses, or failed to bring them to the examination clinic. Ten women (2.1% of the sample) tested with glasses had an acuity of 20-50 or less, and 23 women (4.9% of the sample) similarly tested had an acuity of 20-50 or less in one eye. Thus 5.6% of women in the sample had vision of 20-50 or less in both eyes when tested and 12% of the women in the sample had acuity of 20-50 or less in one eye. It is assumed that these women all had visual impairment sufficient to limit the kind of work they could undertake but that among these women there were those whose vision could be

Table 51. Frequency distribution of systolic blood pressures.

mmHg	No. of women	% of sample
90-99	2	.4
100-109	20	4.2
110-119	50	10.7
120-129	94	20.0
130-139	90	19.2
140-149	66	14.1
150-159	48	10.2
160-169	35	7.4
170-179	23	4.9
180-189	19	4.0
190-199	10	2.1
200-209	6	1.3
210-219	3	.6
220-229	1	.2
230-239	2	.4
Total	469	100.0%

Table 52. Frequency distribution of diastolic blood pressures.

mmHg	No. of women	% of sample
60-64	3	.6
65-69	6	1.3
70-74	44	9.4
75-79	18	3.8
80-84	84	17.9
85-89	64	13.6
90-94	104	22.2
95-99	39	8.3
100-104	38	8.1
105-109	19	4.1
110-114	30	6.4
115-119	5	1.1
120-124	8	1.7
125-129	2	.4
130-134	3	.6
135-139	0	.0
140	2	.4
Total	469	100.0%

Table 53. EKG results, classified by blood pressure diagnosis. Normal blood pressures were defined as less than 140 mmHg systolic, less than 90 mmHg diastolic. Definite hypertension was defined as systolic blood pressure $\geq$ 160 mmHg, and/or diastolic pressure $\geq$ 95 mmHg. The percentages given are of those women within each blood pressure category that had the specified EKG result, with the actual number of cases in parentheses ($\chi^2=42.1$, $P < 0.0001$).

	EKG			
Blood pressure	Normal	Possibly abnormal	Definitely abnormal	Abnormal l-axis deviation
Normal	89.6% (181)	4.5% (9)	2.0% (4)	4.0% (8)
Borderline	80.6% (87)	2.8% (3)	6.5% (7)	10.2% (11)
Hypertensive	63.0% (92)	6.8% (10)	7.5% (11)	22.6% (33)
Overall	78.9% (360)	4.8% (22)	4.8% (22)	11.4% (52)

Table 54. Mean forced vital capacity, adjusted for stature, as a percentage of normal. (This is a measure of respiratory function.)

% of normal for women's heights	Number of women	% of sample
$\leq$ 60	43	9.2
> 60, $\leq$ 80	148	31.7
> 80, $\leq$ 100	201	43.0
> 100, $\leq$ 120	66	14.2
> 120, $\leq$ 140	9	1.9
	467	100.0%

corrected by appropriate lenses. Since people with a visual acuity of 20-50 or worse in both eyes are unable to have a license to drive a motor vehicle in New York State, an additional problem lies in their inability to drive to work (Tables 55, 56).

Tests of auditory acuity were such that it was not possible to detect minor impairment of hearing or to exclude the possibility that noise in the examination room might have interfered with the subject's ability to discern specific sounds. Within the sample, 75 women could not hear a stop watch at 36" from their right ear and 82 women could not hear the watch at the same distance from their left ear. Of those women with evidence of middle ear disease, on the physical examination, 16 (44.4%) said they could not hear the watch 36" from their right ear and 19 (52.8%) could not hear it 36" from their left ear. Among those without such evidence from the physical, 13.8% (59) could not hear the watch with their right ear and 14.7% (63) with their left. Of the entire sample, 19 (4.1%) both had evidence of middle ear disease and could not hear with their left ear, and 16 (3.4%) had such evidence and could not hear the watch with their right ear. Absolute loss of hearing, that is, inability to hear the spoken voice, was only detected in 3 women. During the test the respondent was able to see the examiner's face, so compensation by lip-reading was possible. Five women had defective bone conduction in the right ear and 4 women had defective bone conduction in the left ear (Tables 57, 58, 59, 60). These findings taken together suggest a high incidence of hearing loss due to middle ear disease, a condition or group of conditions in which bone conduction is preserved.

Multiple associations were found between the medical history, physical findings, and the clinical and laboratory tests (Table 61). Hypertension was not only related to the cardiac history and diagnosis, but also to obesity, positive EKG findings, and a number of elevated blood findings including serum cholesterol. Positive EKG findings were related not only to cardiac history and diagnosis, but also to systolic blood pressure, obesity and unemployment. Both hypertension and positive EKG findings increased in frequency with age.

The vital capacity, expressed as a percentage of normal values, showed a negative relationship to respiratory and cardiac history, respiratory diagnosis, the presence of cyanosis and lung rales, obesity, age and the red cell count. The association of obesity, low vital capacity and elevated red cell count (polycythemia) is characteristic of the Pickwickian syndrome, a condition found among grossly obese persons. Like the fat boy in Dickens' "Pickwick Papers", persons with this syndrome tend to be sleepy. Such somnolence is on the basis of hypoxia due to poor lung ventilation. Although somnolence was not noted among our grossly obese women, they tended to be unemployed and to complain of tiredness which, it may be inferred, were direct or indirect results of their physical condition.

Disabilities found on the physical examination were considered in terms of the work limitation that each would impose. Through this

Table 55. Results of visual acuity (Snelling) tests.

	Left Eye		Right Eye	
	Number of Women	Percent of Sample	Number of Women	Percent of Sample
20/20	196	42.1	204	43.8
20/25	115	24.7	100	21.5
20/30	60	12.9	57	12.2
20/40	36	7.7	56	12.0
20/50	24	5.2	21	4.5
20/70	17	3.6	14	3.0
20/100	7	1.5	4	0.9
Worse than 20/100	11	2.4	10	2.1
Missing data	3	--	3	--
Totals	469	100.0	469	100.0

Table 56. Results of visual acuity tests among those women who either had no glasses, or failed to bring them to the clinic:

Visual acuity	Number of women	% of total sample
Better than 20-50 in both eyes	219	47.0%
20-50 or less in one eye only	33	7.1
20-50 or less in both eyes	16	3.4
	268	57.5%
Among those women tested with glasses:		
Better than 20-50 in both eyes	165	35.5%
20-50 or less in one eye only	23	4.9
20-50 or less in both eyes	10	2.1
	198	42.5%

Table 57. Subjects' ability to hear a stopwatch at 36" distance (auditory acuity, air conduction).

	Right Ear		Left Ear	
	Number of Women	Percent of Sample	Number of Women	Percent of Sample
Can hear watch	389	83.8	382	82.3
Cannot hear watch	75	16.2	82	17.7
Missing data	5	--	5	--
Total	469	100.0	469	100.0

Table 58. Association between evidence of middle ear disease found on physical examination and subject's ability to hear a stopwatch at 36" distance (right ear, G = 17.8; left ear G = 5.4, P <.025).

	Evidence of middle ear disease (past or present) found on physical exam	No such evidence found	Total
Left ear:			
Could hear stopwatch	17 (47.2%)	365 (85.3%)	382 (82.3%)
Could not hear stopwatch	19 (52.8%)	63 (14.7%)	82 (17.7%)
Total	36 (100.0%)	428 (100.0%)	464 (100.0%)
Right ear:			
Could hear stopwatch	20 (55.6%)	369 (86.2%)	389 (83.8%)
Could not hear stopwatch	16 (44.4%)	59 (13.8%)	75 (16.2%)
Total	36 (100.0%)	428 (100.0%)	464 (100.0%)

Table 59. Apparent inability to hear the spoken voice. (Subject could see the interviewers' face and hence may have compensated by lip-reading.)

	No. of women	% of sample
Can hear	461	98.3%
Cannot hear	3	0.6
Not tested	5	1.1
Total	469	100.0%

Table 60. Occurrence of sensorineural ("nerve") deafness, indicated by inability to hear tuning fork vibrating, when held against mastoid bone (bone conduction).

	Right Ear		Left Ear	
	Number of Women	Percent of Sample	Number of Women	Percent of Sample
Can hear	452	98.9	453	99.1
Cannot hear	5	1.1	4	0.9
Missing data	12	--	12	--
Total	469	100.0	469	100.0

Table 61. Correlations between medical history, physical findings, and clinical and laboratory tests.

Variables correlated with high systolic blood pressure:

	r	P
Diagnosis of heart disease from the physical exam	.55	< .001
Triceps skinfold thickness	.41	< .001
History of cardiac disability	.32	< .001
Age	.30	< .001
EKG results	.29	< .001
Red blood count	.23	< .001
Edema	.16	< .001
Mean corpuscular hemoglobin	-.16	< .001
Diuretics taken	.14	< .001
Serum protein	.13	.004
Hematocrit	.12	.005
Cholesterol	.12	.006

Variables correlated with forced vital capacity as percent of normal for subject's stature.

	r	P
Diagnosis of lower respiratory disease	-.26	< .001
Age	-.23	< .001
Mean corpuscular hemoglobin concentration	.23	< .001
Edema	-.20	< .001
Cyanosis	-.19	< .001
Lung rales	-.19	< .001
Employment status	.17	< .001
History of cardiac disability	-.15	< .001
Recall of total calories, 24 hours	.13	.003
Squared deviation from the mean--mean corpuscular volume	-.12	.004
History of respiratory disability	-.12	.006
Triceps skinfold thickness	-.12	.006
Red blood count	-.11	.012

Table continued on following page.

Table 61 - continued.

Variables correlated with EKG results (1=normal, 2=possibly abnormal, 3=definitely abnormal, 4=abnormal left axis deviation. This ranking corresponds to the proportion of unemployed women in each category).

	r	P
Systolic blood pressure	.29	< .001
Diagnosis of heart disease from physical examination	.16	< .001
Triceps skinfold thickness	.16	< .001
Employment status	.14	.002
Mean corpuscular hemoglobin	-.13	.002
Age	.13	.003
History of cardiac disability	.12	.005
Red blood count	.12	.007
Serum albumin	-.11	.010
Years employed in last 10	-.11	.025

Variables correlated with employment status, 1971. (1=not working, 2=working)

	r	P
Total calories, diet recall	.19	< .001
% forced vital capacity	.17	< .001
Total protein, diet recall	.16	< .001
Total iron, diet recall	.15	.001
EKG findings	-.14	.002
Mean corpuscular hemoglobin concentration	.13	.003
Hematocrit	-.11	.008
Serum protein	-.10	.014
Red blood count	-.12	.004
Triceps skinfold thickness	-.10	.015
Cyanosis	-.10	.019

assessment, it was decided by the examining physician that 209 women (44.6% of the sample) had no health problems which would interfere with their work. Among the rest who all had some medical problem causing a temporary or permanent work limitation, 96 had disabilities that if treated would restore the women to a condition where their capacity for work would be unimpaired. Conditions producing a requirement for rehabilitation in 3 or more women were goiter (3), obesity (14), eye diseases (3), deafness (5), hypertension (12), varicose veins (10), dermatitis (4), back problems (4), late effects of motor vehicle accidents (4), and late effects of other accidents (4). There were 69 women in whom it was clear that health would limit the type of job they could take. Among these 9 could only be considered for a sheltered workshop and 17 had health problems severe enough to prevent employment (Table 62). Diseases causing permanent work limitation or prevention in 3 or more women included late effects of polio (3), obesity (9), psychoses (4), neuroses (4), alcoholism (3), mental retardation (4), physical disorders of psychogenic origin (5), epilepsy (6), eye disease (9), deafness (4), chronic rheumatic heart disease (7), chronic bronchitis (5), emphysema (3), asthma (4), dermatitis (7), rheumatoid arthritis (5), and the late effects of surgery (3).

Unemployment at the time of the study was associated with presence of work limitation defined by the examiner, the presence of disease, and more diagnoses on the physical examination. Women who were on welfare were more likely to have long-term disease, musculoskeletal disease and again, more diagnoses on the physical examination.

Vital statistics on disability among workers and non-workers (Disability Among Persons in the Labor Force by Employment Status. U.S. July 1961-June 1962, National Center for Health Statistics Series 10, No. 7) showed that there is a larger percent of unemployed than employed persons with limitation of activity. Unemployed females have a higher proportion of chronic conditions and limitation of activity than currently employed females.

The Hunterdon Study of the prevalence of chronic illness and the needs for care in a rural area (Chronic Illness in a Rural Area. The Hunterdon Study, reported by Trussell, R. E. and Elinson, J. 1959, Harvard University Press, Cambridge, Mass.) is in some respects comparable to our own investigation. In this study, it was found that disabling conditions limited the range of possible occupations for 1 worker in 6. These disabled workers, like many of our women, could engage in occupations which require only light or moderate physical activity or in occupations which do not require normal vision or hearing. It must be emphasized that the problem for the uneducated, unskilled women with disabilities is to find the right job.

In the New York Times for Monday, September 24, 1973 preliminary findings of a study in New York City by Dr. Paul A. Brown are reported,

Table 62. Type of work limitation found by physical examination, in the judgment of the examining physician

	No. of women	% of sample
Health would not interfere	209	44.6
Temporary interference-late pregnancy	4	0.9
Temporary interference-post-operative	3	0.6
Cosmetic problem	7	1.5
With treatment, would not interfere	96	20.5
With treatment, would limit type of job	32	6.8
Health would limit type of job	69	14.7
Could only work in Sheltered Workshop	9	1.9
Would prevent employment	17	3.6
Unable to judge	4	0.9
Cosmetic + with treatment wouldn't interfere	3	0.6
Cosmetic + Sheltered Workshop	3	0.6
Cosmetic + with treatment would limit job	3	0.6
Cosmetic + would limit type of job	10	2.1
Total	469	100.0%

in which it was shown that among 10,000 women on welfare, 65% are disabled. The problem is not only that disability leads to unemployment and unemployment to welfare dependence, but also that the rehabilitation of chronic disability in middle-aged women has low priority because those concerned, patient, doctor and administrator, doubt its success.

Obesity and Its Complications

There were 461 non-pregnant women and of these 61.5% (279) were classified as obese, using a triceps skinfold measurement greater than 30 mm as an indicator of obesity (Figure 2). A triceps skinfold thickness, in this sample, greater than 30 mm was associated with a weight above the U.S. median for a given height and age. Weight in pounds (y) for this sample was related to height in inches (x) by the regression equation $y = 4.31 x - 113.52$, which is comparable to the regression equation for the 25-34 year old age grouping found in 1960-62 by the National Health Survey and reported by the National Center for Health Statistics in 1966, viz.: $y = 4.01 x - 117.10$. However, the relationship between weight and height in the 1960-62 survey for the groups related in age to our sample were markedly different, which suggests that these relationships may be dependent on nutritional factors arising in early life (Figure 3). The normalized multiple regression coefficients for weight by height, skinfold and age in our sample were 0.24, 0.63 and 0.02 respectively. Since these transformed values correct for the variability and scale of the different variables, the coefficients show that skinfold is most important and age least important in predicting weight. The equation was obtained: predicted weight (lbs) = 3.97 (height, in.) + 2.34 (triceps skinfold, mm) + 0.13 (age, yrs.) -175.01 for our sample.

An initial impression of an unusual distribution of very fat women was borne out by the finding that 16.6% (78) of the sample weighed more than 200 pounds. Causal relationships between obesity and life style lie outside the framework of this communication. However, in view of current interest in the validity of diet histories, it should be noted that the caloric intakes, for our sample, as estimated from the 24-hour dietary recalls, were inversely related to obesity. Correlation of caloric intake from recall with skinfold: $r = -.207$, $P < .001$.

The mean stature of the women was 62.61 inches (standard error 0.11 inches) and stature was positively correlated with education ($r = 0.12$, $P < 0.01$) and with the percentage of years employed since the age of 16 or since leaving school ($r = 0.11$, $P < 0.01$). Stature was negatively correlated with welfare status ($r = -.098$, $P = 0.19$). These findings corroborate those of other investigators who have shown that shortness is related to low socioeconomic status.

Unemployment was associated with obesity as measured by triceps skinfold thickness (Kendall's tau c = 0.127, $P < .00009$) (Figure 4). Obesity was significantly associated with arthritis, varicose veins, diabetes, non-rheumatic heart disease, abnormal electrocardiograms (EKG), hypertension and a history of gall-bladder disease or hernia (Figures

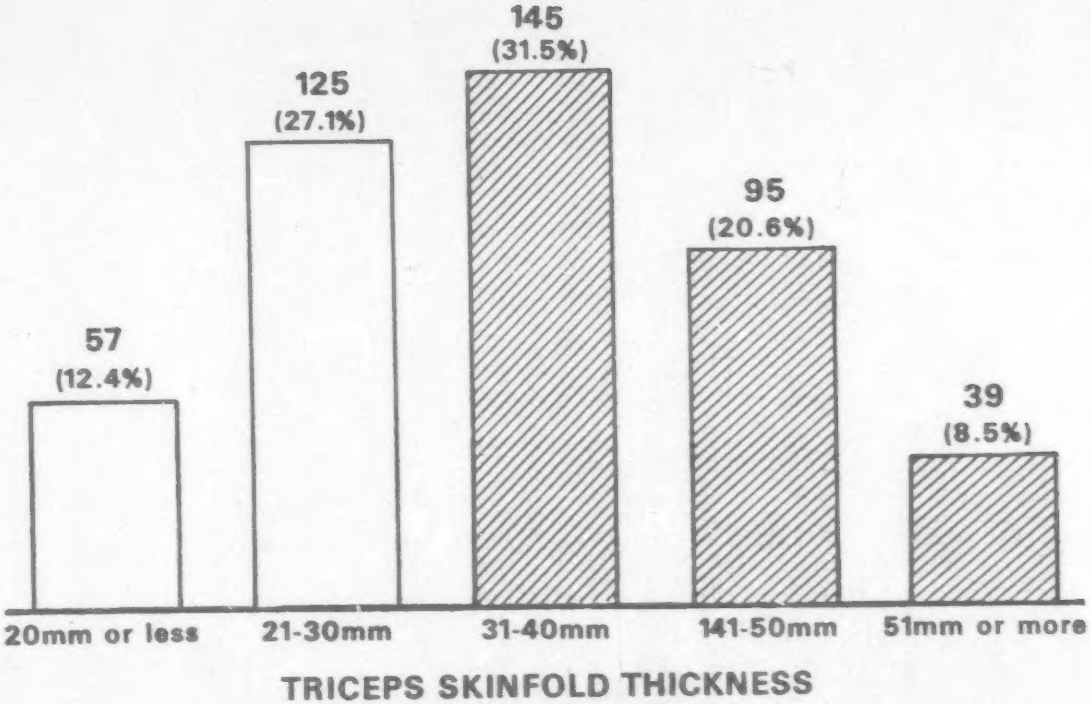

Fig. 2. Frequency distribution of triceps skinfold thickness (a measure of subcutaneous fat).

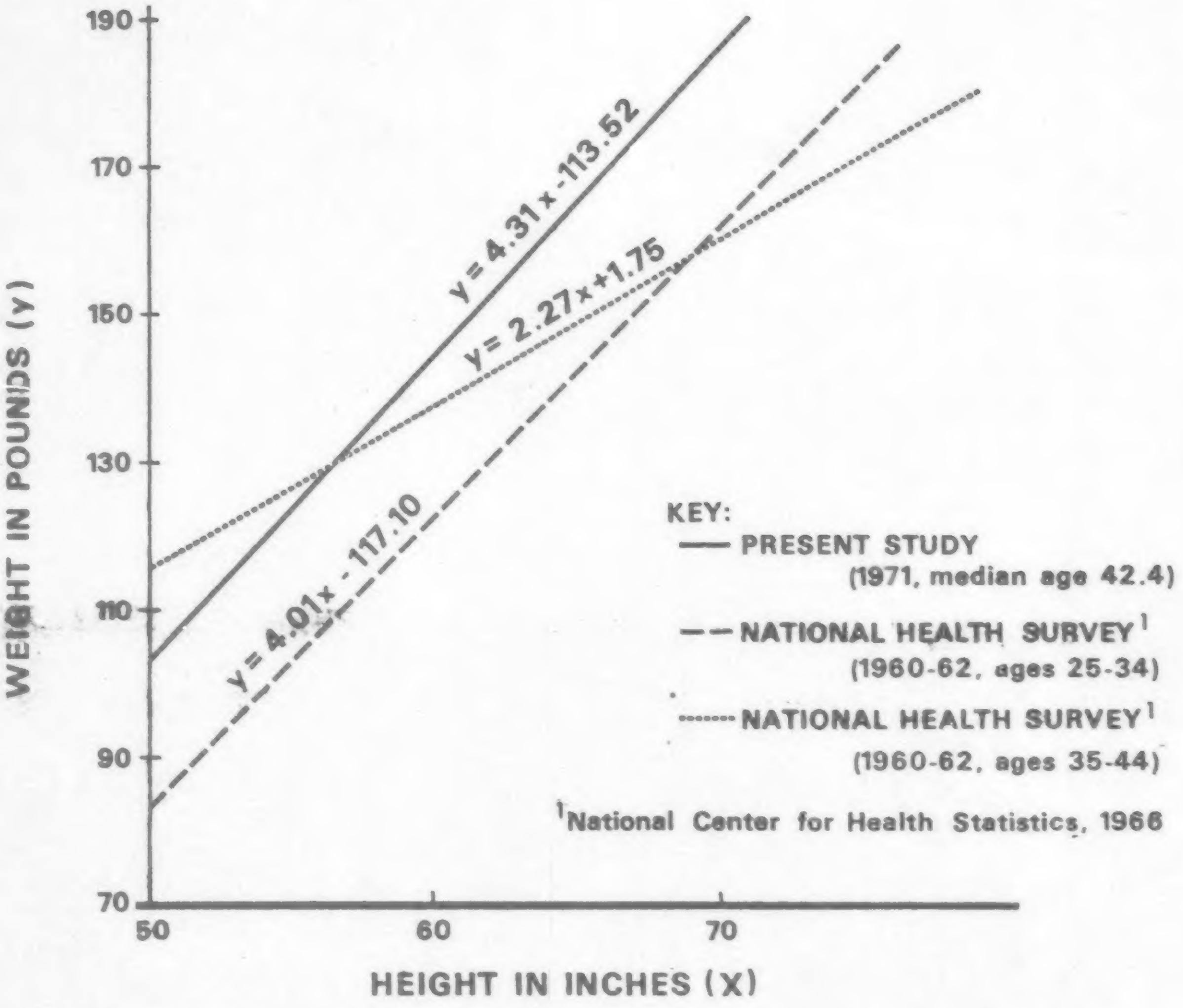

Fig. 3. Regression of weight by height, in the present study, and similar equations calculated for females in the United States from the National Health Survey.

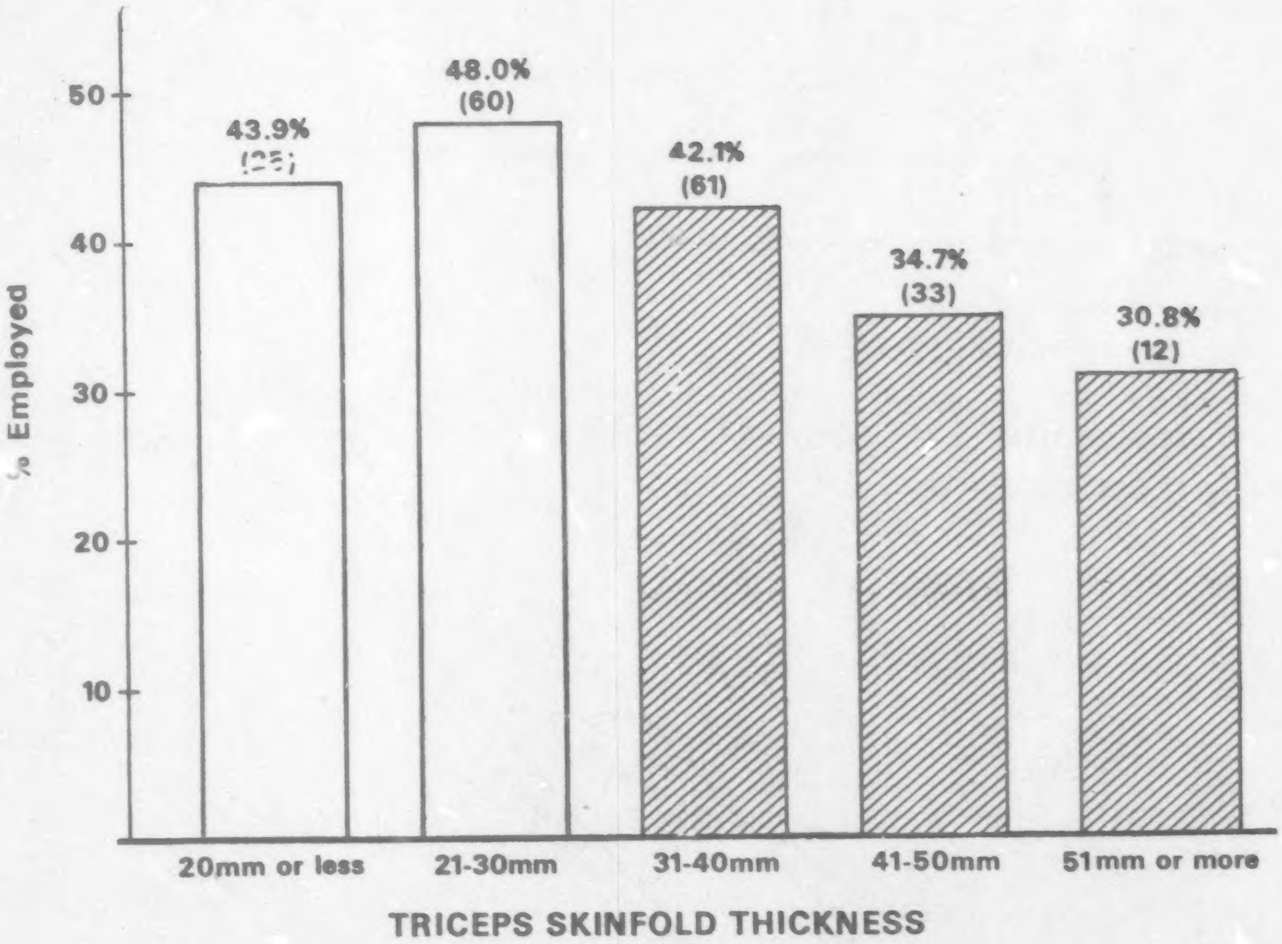

Fig. 4. Relationship between employment and triceps skinfold thickness.

5, 6, 7, 8, 9). Among these complications of obesity, unemployment was significantly more frequent among the obese diabetics (tau b = -.103, P = .0049) and in women with abnormal EKG readings (tau c = -.101, P = .0007). Hypertension was only correlated with unemployment when associated with abnormal EKG findings (Figures 10, 11), which suggests that it is the physical disability associated with hypertensive heart disease that imposes a work limitation rather than hypertension per se.

Complaints of headache, insomnia, nervousness and tiredness were more common among obese women (tau b = .05, $P < .05$): these symptoms of neurasthenia were associated with unemployment but as an independent effect.

Relationships between nervous symptoms, obesity and unemployment need to be clarified. Nervous symptoms may bear a causal relationship to obesity in that overeating is used as a tranquilizer. However, because of the shortcomings of dietary recall, we were unable to prove that excessive caloric intake was characteristic of our fat women (Figure 12). Neurasthenia may be secondary to obesity but this again is unproven. Further it has not been shown that even if obese women have more nervous symptoms than those not obese, these symptoms diminish work motivation and so keep women out of the work force. Tiredness, which we have considered as a nervous symptom, might be associated with the effort syndrome, but neither this complaint nor breathlessness, palpitations or chest pain, commonly associated with the effort syndrome were significantly more common in obese than non-obese or in unemployed than in employed women.

Apart from the earlier established association between family size and work status (r = -.09, $P < .02$), complications of obesity are the major factors accounting for unemployment among obese women in the sample. Correcting by partial correlation for the joint effects of abnormal EKG, diabetes, history of gallbladder disease and hernia as well as the number of children, lowered the correlation r, between work status and triceps skinfold thickness from -0.113 (P = .009) to -0.068 (P = .077 n.s.). The EKG findings alone accounted for a drop to r = -0.090 (P = .029).

These findings give objective evidence that the association between unemployment and obesity can be explained in terms of physical work limitation. Obese women may be unable to work due to secondary disabilities. Questionnaires completed by 81 employers of women in our sample population elicited the information that 43.9% considered obesity as medical grounds for not employing an applicant, and that a history of heart disease or high blood pressure was considered as relative or absolute causes for non-employment by 47.6% and 30.5% of employers, respectively.

Thus the cost of obesity has not only to be computed from premature death and from the health costs associated with the treatment of this nutritional disease and its complications, but also from loss of earning

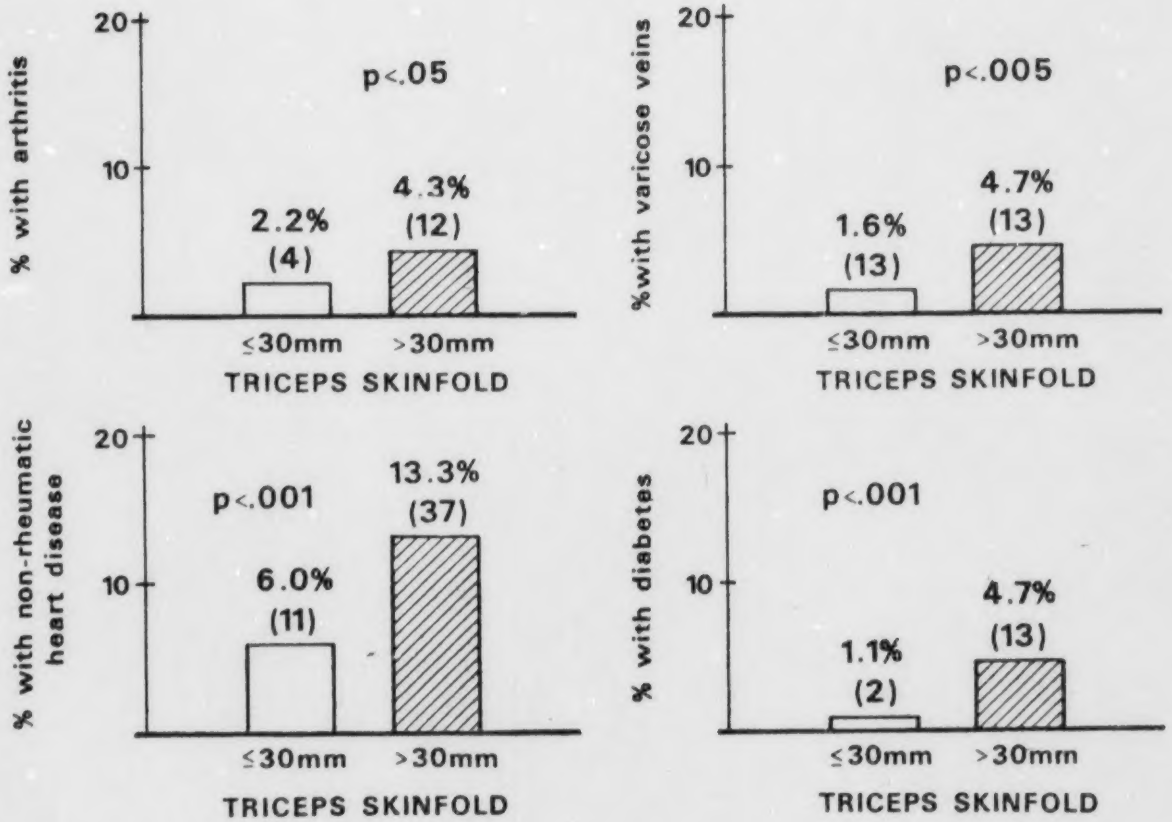

Fig. 5. Association between obesity (defined as triceps skinfold thickness greater than 30 mm) and four medical conditions.

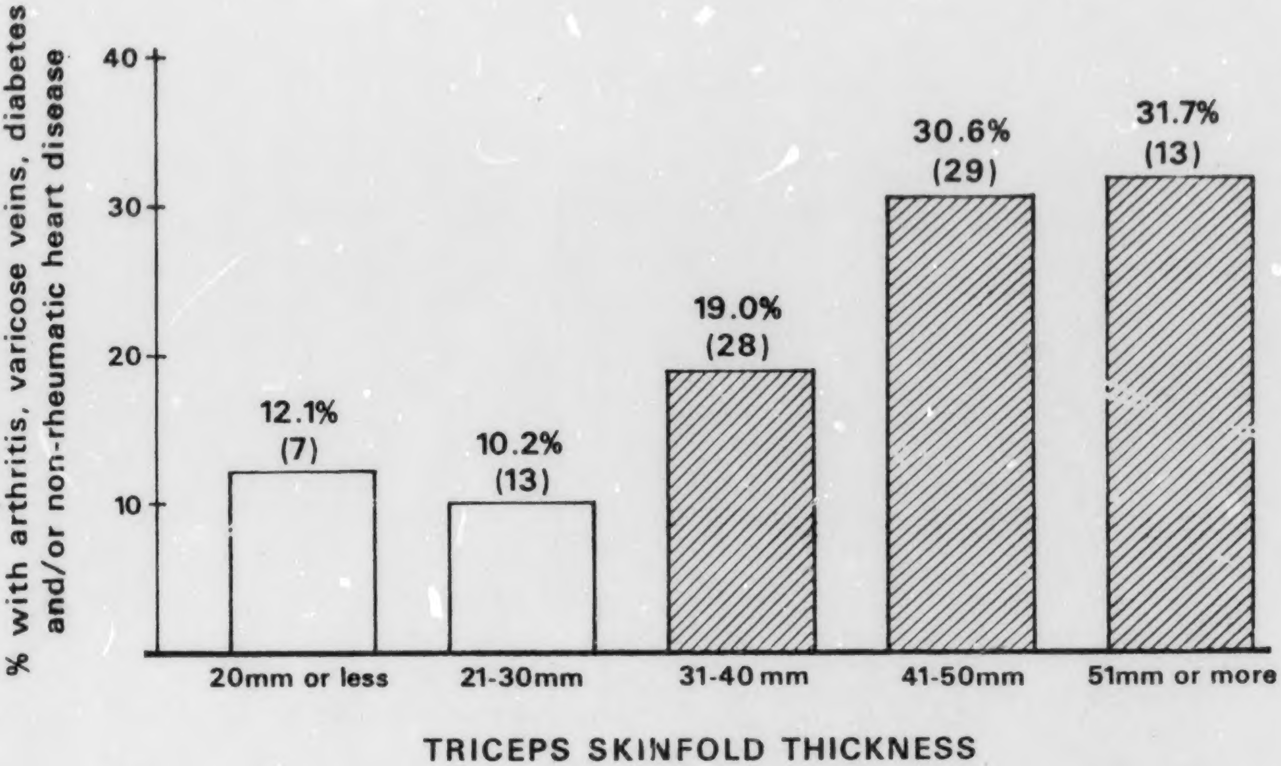

Fig. 6. Proportion of women with arthritis, varicose veins, diabetes and/or non-rheumatic heart disease among those in each category of triceps skinfold thickness.

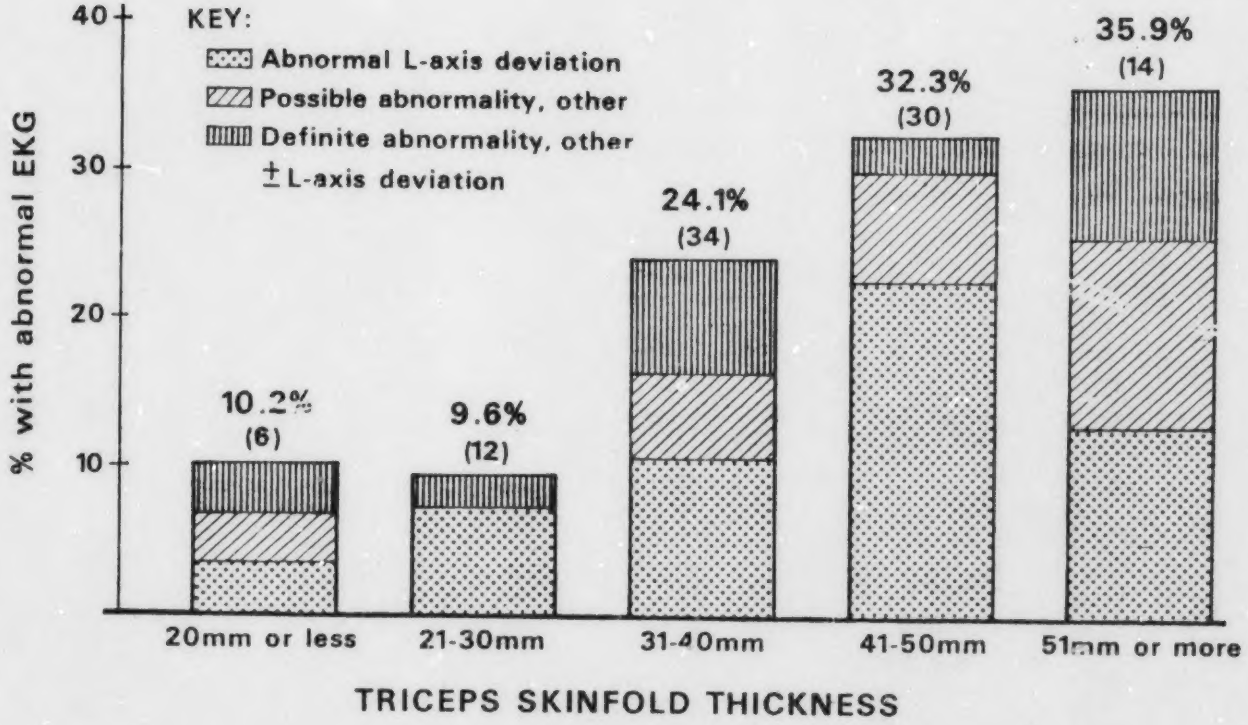

Fig. 7. Proportion of women in each triceps skinfold category with abnormal EKG findings.

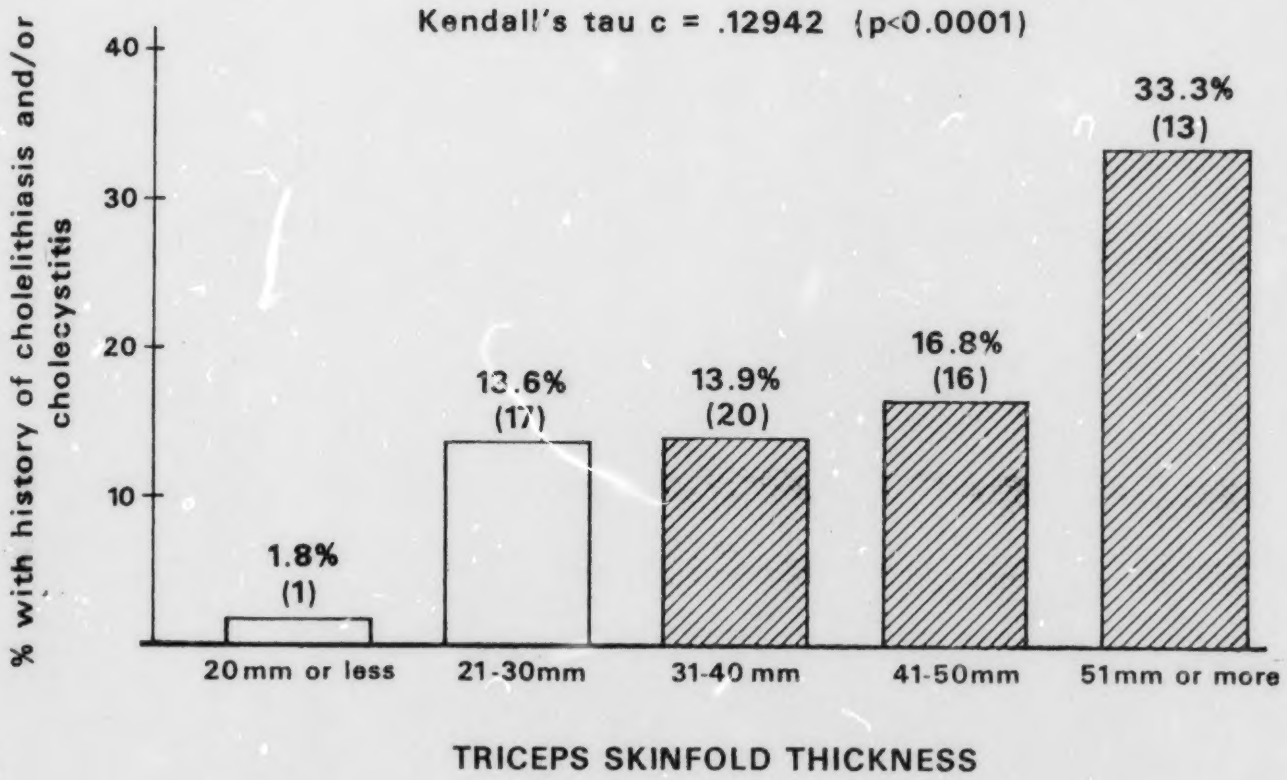

Fig. 8. Proportion of women in each triceps skinfold category with a history of cholelithiasis and/or cholecystitis.

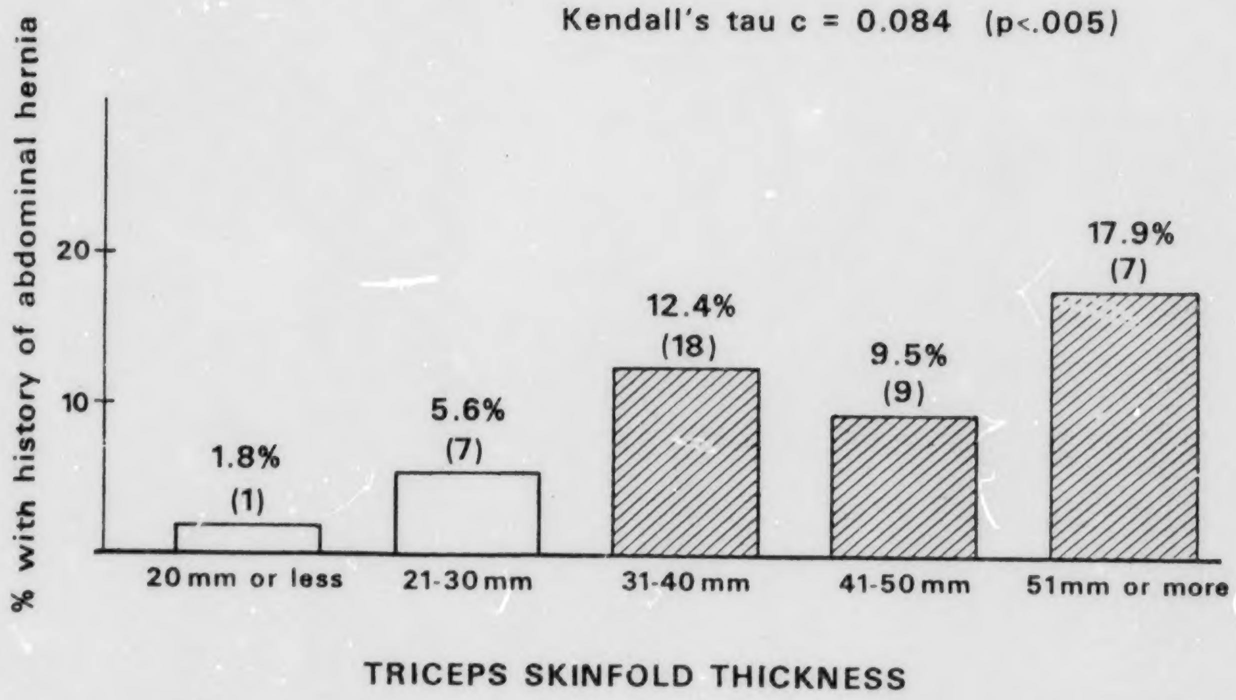

Fig. 9. Proportion of women in each triceps skinfold category with a history of abdominal hernia.

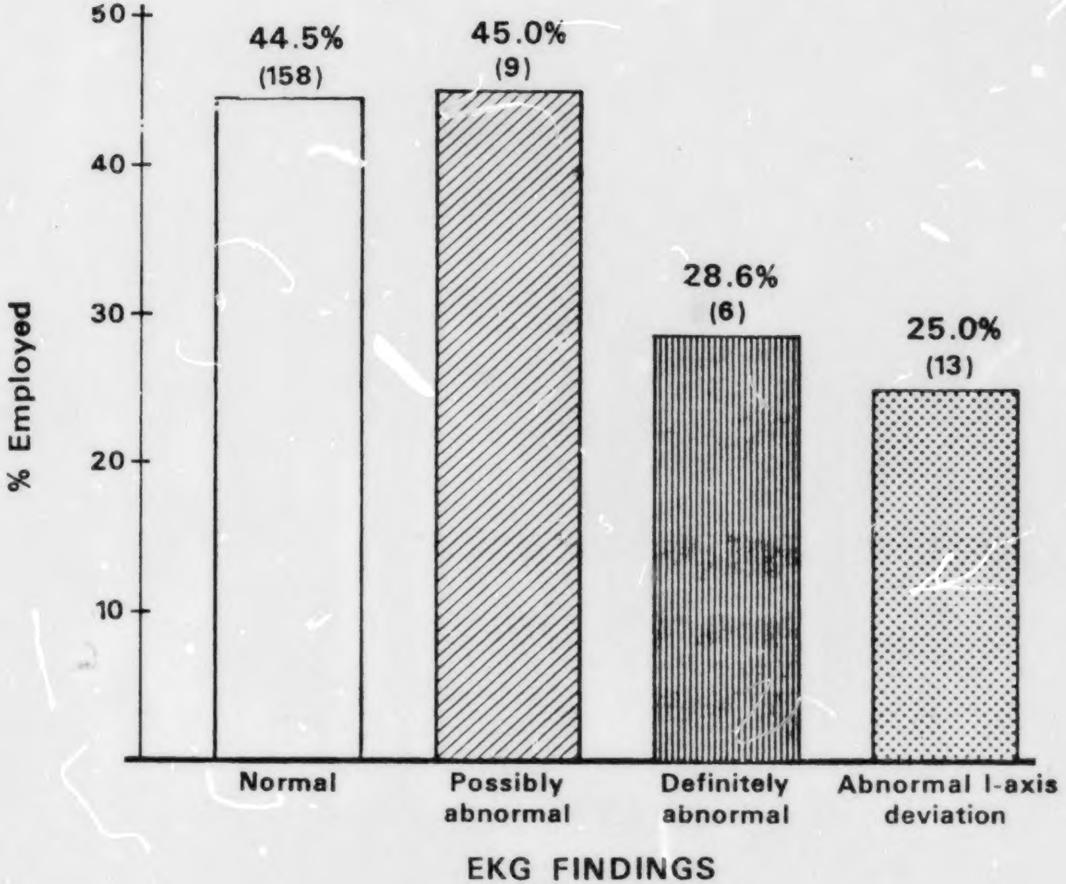

Fig. 10. Proportion of women with each type of EKG finding who were employed at the time of the study.

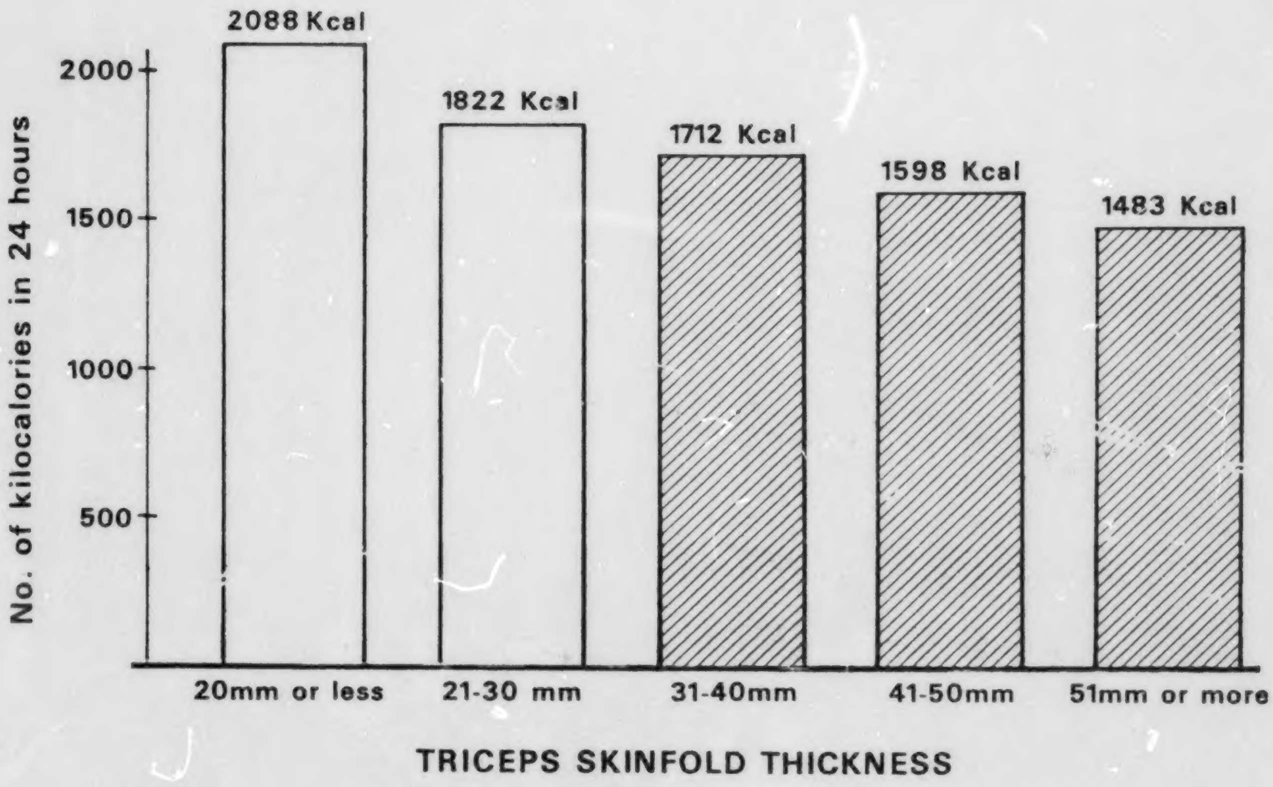

Fig. 11. Mean number of calories recalled by the women in each triceps skinfold category ($r= -.20$, $P < .001$).

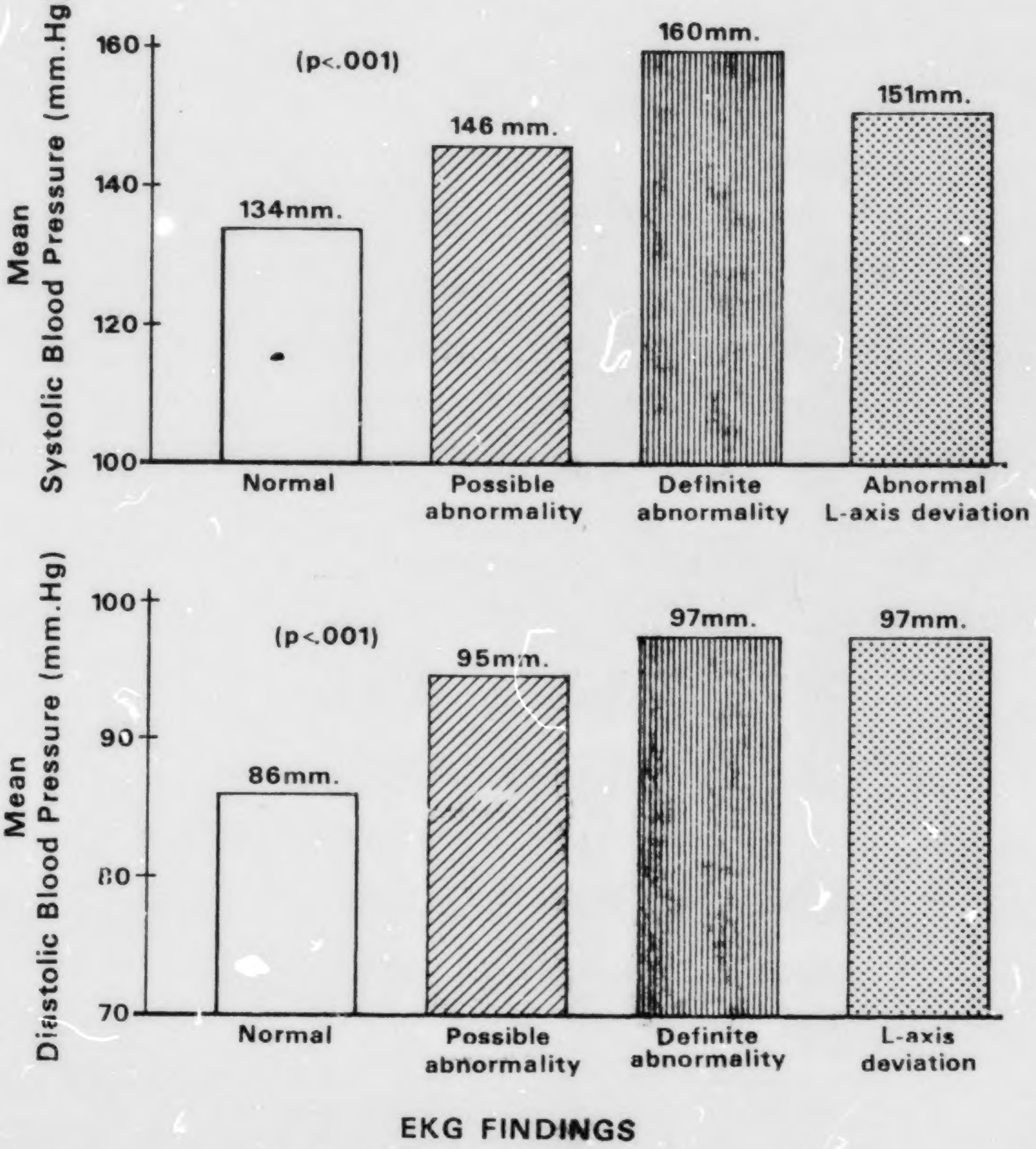

Fig. 12. Mean systolic and diastolic blood pressures among those with different EKG results.

power. Among women in lower socioeconomic groups, the only sources of livelihood are from their own employment, from income acquired from a working husband, or from welfare dependence. Welfare status was negatively correlated with employment ($r = -.18$, $P < .001$) and with the presence of an employed husband ($r = -.49$, $P < .001$) in our population.

Height as an Index of Socioeconomic Status of Origin

The general impression of our population was that they were short in stature. Their mean height was 62.6 inches (S.E. 0.112). Height showed strikingly high correlations with indices of socioeconomic status, with major work-related variables, and with health (Table 63). It was related positively to the total years of employment in the past 10 years ($r = .16$, $P \leq .001$); to total income at the time of the Feldman study ($r = .11$, $P = .007$); to education, grouped by highest grade completed ($r = .12$, $P \leq .01$); and to the total years employed as a percentage of potential years of employment ($r = .11$, $P \leq .01$). It was negatively related to welfare status as of 1971 ($r = -.10$, $P \leq .02$); the number of medical problems at birth ($r = -.08$, $P < .05$); the number of health problems in medical history ($r = -.08$, $P < .05$); and with the dental index ($r = -.09$, $P = 0.032$). Summarizing these findings, it may be stated that the shorter the woman the more likely she was to have been unemployed, low in income, poorly educated, on welfare and to have had medical problems at birth, as well as multiple health problems during life. Also, the shorter the woman, the worse the condition of her teeth or mouth. This does not mean that all short women have these characteristics! On the contrary, height is determined by genetic factors, but early malnutrition, infection, as well as interaction between these variables can result in stunted growth. This has been observed previously in the United States and also in developing countries, (Bakwin, H. and McLaughlin, S. M. Lancet II, 1195, 1964; Chavez, H. Ecological Factors in the Nutrition and Development of Children in Poor Rural Areas. Proc. Western Hemisphere Nutrition Congress III, 1971. Futura Publ. Co., 1972, p. 265). Interestingly, in a study of families in Peru, it appeared that underdevelopment in height started in infancy, in spite of considerable weight gain. Malnourished infants as well as subhuman primates when refed lag in linear growth, although weight is readily gained, (Blanca Adrianzen, T. et al. Growth of children from extremely poor families. Amer. J. Clin. Nutr. 26: 926, 1973; Sandstead, H. R. et al. A study of the dietary background and nutriture of the Navajo Indian. III. Physical findings. J. Nutr. 60: Suppl. 2, 35, 1956; Kerr, G. R. et al. Malnutrition studies in the rhesus monkey. I. Effect on physical growth. Amer. J. Clin. Nutr. 23: 739, 1970). A child, malnourished in early life because of some disease unassociated with poverty, can catch up with her fellows with respect to performance when the disease is controlled. On the contrary, the child from an impoverished household who suffers multiple forms of early neglect including food deprivation may not only be short, but also may fail to develop to her full social and mental potential. Our findings on the height of the women not only serve to document early malnutrition, but together with the correlates give evidence of low socioeconomic status of origin. It is worth noting that many of our women were born during the Depression.

Table 63. Correlations with height among the women in the sample.

	r	P
Weight	.26	<.001
Years employed in last ten	.16	<.001
Highest grade completed	.12	.003
Total family income at time of Feldman's study	.11	.007
Percent of adult life employed	.11	.008
Welfare status, 1971	-.10	.019
Dental Neglect Index	-.09	.032
Sum of weights of medical problems, whole history	-.08	.036
Sum of weights of medical problems at birth	-.08	.050

Laboratory Procedures

Introduction

Blood counts were carried out to study the incidence of anemia. Serum iron and iron binding capacity were determined as measures of iron repletion or otherwise as well as in the case of iron binding capacity, of protein status (low serum iron is the first indication of iron deficiency). Serum proteins were determined in order to assess protein nutritional status and liver function. Serum cholesterol was determined as a measure of lipid metabolism and with special reference to atherosclerosis. Serum creatinine was determined as a measure of kidney function.

Methodology

Hematology was done at Tompkins County Hospital on the model S Coulter Counter (Coulter Diagnostics, Inc., Hialeah, Fla.).

Total protein in the serum was determined using the biuret method. The biuret solution consisting of 1.5 gm cupric sulfate, 6 gm sodium potassium tartrate and 300 ml of 10% sodium hydroxide diluted to 1 liter, is added to the serum. A purple-colored copper complex forms. The intensity of the color indicates the amount of protein present. This color is measured on the Colman junior spectrophotometer model 6D at 550 mμ (J. Biol. Chem. 177: 751, 1949).

Cellulose acetate electrophoresis was used to separate the serum proteins in order to obtain a ratio of albumin to globulins (A/G ratio). The Gelman electrophoresis chamber, power source model No. 38206, high resolution buffer/(Tris-Barbital-sodium-barbital, pH 8.8), and Sepraphore III cellulose polyacetate strips were used. (Gelman Instrument Co., Ann Arbor, Michigan). The sample was applied and the strips run for 40 minutes at 300 volts. They were then stained with ponceau S stain, decolorized with 5% acetic acid, then cleared with 9% acetic acid in methanol. Finally the strips were read on a photovolt densitometer model No. 542 (Photovolt Corp., New York City). The areas under the curves were measured to give the albumin to globulin ratio (A/G ratio). The percent albumin was also calculated.

Serum cholesterol present in serum was determined by a micro method (Clark, Rubin and Arthur, Analyt. Biochem. 24: 27-33, 1968). This method uses potassium hydroxide in ethanol to precipitate protein. The supernatant is then reacted with ferric chloride in ethanol and concentrated sulfuric acid to form the iron-chromogen of cholesterol, which has a red-orange color. This chromogen is extracted into methylene chloride to remove impurities and stabilize the color. The color was then read on the Colman junior spectrophotometer.

Serum creatinine was determined by the alkaline picrate method. Serum was deproteinized, then made alkaline with picric acid added. The creatinine complexes with the picric acid to form a yellow colored complex which is read on the Colman junior spectrophotometer. This uses the Jaffe principle (Bommes and Taussky, J. Biol. Chem. 158: 581, 1945; also Taussky, Clin. Chem. Acta 1: 220, 1956) as modified by Mark and Zimmer, Atlas of Clinical Laboratory Procedures 1: Clinical Chemistry, The Blakiston Division, McGraw-Hill Book Co., New York.

Serum iron and iron binding capacity were determined by the Ramsay method. The iron is separated from the siderophilin by heating and then reacted with 2,2,2-tripyridyl to form a colored complex. The color intensity was read on a Colman junior spectrophotometer. The iron binding capacity was determined by first saturating the siderophilin with iron, removing the excess, then proceeding with the iron assay (Ramsey, Clin. Chim. Acta 2: 214, 1957).

The results of the hematological and biochemical analyses are given in Tables 64-68 .

Discussion of Laboratory Findings

Among 460 women for whom complete blood counts were performed, severe anemia was rare. Six women had hemoglobin levels below 10 gm per 100 ml and a total of 25 women had hemoglobin levels below normal limits ($<$ 12 gm per 100 ml). Erythrocyte changes indicative of iron deficiency anemia, viz. microcytosis (small cells) and hypochromia (too little hemoglobin per cell) were found in 27 women. Evidence of a greater or lesser degree of iron deficiency, with decreased transferrin saturation, was found in 87 women (18.8% of the sample). Although iron deficiency, with or without anemia, is known from surveys to be prevalent in young women, the incidence of this deficiency decreases with age (White, H. S. Iron deficiency in young women. Amer. J. Public Health 60:659, 1970). The fact that iron deficiency was not a major nutritional problem in our population may be explained by the physiological age of the sample. Within our group of women, 153 were no longer menstruating, either because they had passed the menopause (85), or because they had had a hysterectomy (68). Iron losses from blood discharge were therefore minimized. In view of the methodological problems attendant on the 24-hour dietary recall, it is not possible to relate iron deficiency or otherwise to iron intake.

Obese women show certain characteristic blood changes. Hemoglobin levels were positively correlated with skinfold thickness ($r=0.1357$, $P < 0.002$) and the mean corpuscular hemoglobin concentration was negatively correlated with skinfold thickness ($r= -0.1431$, $P < 0.001$). Increases in the red cell count are known to occur in very fat individuals but a corresponding increase in hemoglobin synthesis may not occur.

Mild folate deficiency was indicated by hematologic changes including decreased red cell count and increased mean corpuscular volume. Intake of oral contraceptives (The Pill) is known to induce folate deficiency (Shojania, A. M. et al. Oral contraceptives and serum folate level. Lancet 1:1376, 1968), more especially in women on marginal dietary intakes of folic acid. In our population, the 48 women on the Pill showed

Table 64. Results of hematological studies.

Determination	Normal values[1]	Cells/cc	# of women	% of sample
White blood count	(7.8±3.0) x 10^3	< 4.8 x 10^3	26	5.6%
		Normal	394	85.7
		> 10.8 x 10^3	40	8.7
			460	100.0%

Mean: 7.95 x 10^3
S.E.: 0.101 x 10^3
Range: (2.8 to 14.8) x 10^3

Determination	Normal values[1]	Cells/cc	# of women	% of sample
Red blood count (cells/cc)	(4.8 ± 0.6) x 10^6	< 4.2 x 10^6	78	17.0%
		Normal	376	81.7
		> 5.4 x 10^6	6	1.3
			460	100.0%

Mean: 4.53 x 10^6
S.E.: 0.017 x 10^6
Range: (3.27 to 6.52) x 10^6

Determination	Normal values[1]	Hemoglobin (gm/100 ml)	# of women	% of sample
Hemoglobin (gm/100 ml)	14±2 gm/100 ml	≤ 10	6	1.3%
		10.1-12	19	4.1
		12.1-14	177	38.5
		14.1-16	235	51.1
		≥ 16.1	23	5.0
			460	100.0%

Mean: 14.11 gm/100 ml
S.E.: 0.063 gm/100 ml
Range: 8.1 to 21.2 gm/100 ml

Determination	Normal values[1]	Hematocrit (%)	# of women	% of sample
Hematocrit (%)	42±5%	< 37	32	7.0%
		Normal	397	86.3
		> 47	31	6.7
			460	100.0%

Mean: 41.9%
S.E.: 0.174%
Range: 27.2 to 65.4%

Table 64 continued on following page.

Table 64 - continued.

Determination	Normal values[1]	Findings		
		MCV	# of women	% of sample
Mean corpuscular volume (μ^3)	$90\pm9\mu^3$ (Coulter Counter) $87\pm5\mu^3$ (Wintrobe)	< 81	24	5.2%
		Normal	407	88.5
		> 99	29	6.3
			460	100.0%
		Mean:	$91.96\mu^3$	
		S.E.:	$.29\mu^3$	
		Range:	$65.0\text{-}108.0\mu^3$	
		MCHC (%)	# of women	% of sample
Mean corpuscular hemoglobin concentration (%)	$34\pm2\%$	< 32	13	2.8%
		Normal	447	97.2
			460	100.0%
		Mean:	33.78%	
		S.E.:	0.04%	
		Range:	30.0 to 35.7%	

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[1] Unless otherwise noted, these values are those determined for the machine by the manufacturer and are the same as those given in Wintrobe, M. M., 1961. Clinical Hematology, Lea & Febiger, Philadelphia.

Table 65. Results of biochemical determination of serum proteins.

Total protein (gm/100 ml). The Ten-State Nutrition Survey defines a level of 6 gm/100 ml. or below as deficient.

Findings: Mean: 8.05 gm/100 ml.
S.E.: .04 gm/100 ml.
Range: 5.7 to 12.3 gm/100 ml.

Only one woman (0.2%) in the sample was deficient by this definition.

Albumin (gm/100 ml). The Ten-State Nutrition Survey defines a level of <3.5 gm/100 ml. as "low".

Findings: Mean: 4.7 gm/100 ml.
S.E.: .03 gm/100 ml.
Range: 3.2 to 8.5 gm/100 ml.

Three women (0.6%) were "low" in albumin by this definition.

A/G ratio (ratio of albumin/globulins, determined by electrophoresis.) Normal values given by the Gelman Mfg. Co. for this procedure and equipment: 1.1 to 2.0.

A/G Ratio	No. of women	% of sample
< 1.1	72	15.4%
Normal (1.1 to 2)	348	74.2
> 2.0	49	10.4
	469	100.0%

Table 66. Results of serum cholesterol determinations. Normal values were taken to be 120-250 mg/100 ml.

Findings: Mean 231 mg/100 ml.
S.E. 2.42 mg/100 ml.
Range 120 to 560 mg/100 ml.

Age grouping	% of this age group with serum cholesterol > 250 mg	No. of women with serum cholesterol > 250 mg
25-34 yrs.	15.8%	9
35-44 yrs.	28.3%	74
45-54 yrs.	32.2%	41
55-64 yrs.	55.5%	10
Whole sample	28.9%	134

Table 67. Results of serum creatinine determinations. Normal values for this method[1]: 0.5-2.0 mg/100 ml.

Mean: .96 mg/100 ml.
S.E.: .014
Range: .33 to 2.5 mg/100 ml.

[1] Mark & Zimmer, Atlas of Clinical Laboratory Procedures 1: Clinical Chemistry, Blakiston Div., McGraw-Hill Book Co., N.Y.

Table 68. Results of biochemical determinations of iron status.

Serum iron
Mean: 91.13 μg/100 ml.
S.E.: 1.74 μg/100 ml.
Range: 20-267 μg/100 ml.

Total iron binding capacity
Mean: 384.5 μg/100 ml.
S.E.: 3.78 μg/100 ml.
Range: 180-726 μg/100 ml.

% Transferrin saturation (Below 15% transferrin saturation is considered deficient by the Ten State Nutrition Survey. (DHEW Publication No. (HSM) 72-8130.)

Mean: 24.88%
S.E.: .55%
Range: 5.2-85.0%

	No. women	% of sample
Below normal (<15%)	87	18.8%
Normal	377	81.2
	464	100.0%

small but significant decreases in their red cell count and increases in mean corpuscular volume, as compared to women not on the Pill. Another drug which causes folate deficiency is the anticonvulsant, diphenylhydantoin (Dilantin) (Reynolds, E. H. et al. Anticonvulsant therapy, megaloblastic hemopoiesis and folic acid metabolism. Quart. J. Med. 35:NS 521, 1966). Five women on this drug for the treatment of epilepsy had decreased red cell counts and increased mean corpuscular volume as compared to other women in the population.

Protein deficiency was a rarity. One woman had a total serum protein level below normal limits (less than 6 gm per 100 ml) and 13 women had serum albumin values below normal limits (less than 3.5 gm per 100 ml).

Elevation of serum cholesterol levels above normal limits occurred in 135 women (29.1% of the sample). Serum cholesterol levels were positively correlated with skinfold thickness ($r=0.0959$, $P < 0.02$); with systolic blood pressure ($r=0.1176$, $P<0.006$); with hemoglobin level ($r=0.1793$, $P < 0.001$). Raised serum cholesterol values have previously been found in obese persons and in those with hypertension (Mayer, J. Overweight. Causes, Cost and Control. Prentice Hall, Inc., 1968).

The interesting relationship between serum cholesterol and hemoglobin suggests that higher values of both are associated with high intake of nutrients, in this case fats and iron, respectively.

Dental Status

The dental condition of many of our women was so deplorable that when they opened their mouths to speak, you could see and smell decay. Rather young and middle-aged women looked prematurely old because their cheeks were sunken, due to missing teeth and absent dentures. In many women the combined effects of dental odor, discolored, decayed and missing teeth were such as to give an obvious reason for employer prejudice and non-employability. The major dental health problems were advanced caries and periodontal disease.

In response to questions about present oral complaints, 61 women (13.0% of the sample) said that their gums were tender; 57 women (12.2% of the sample) stated that their gums bled on touch or when brushed; and 21 women (4.5% of the sample) said that their teeth were a cosmetic problem. Among women who had lost all their teeth in the upper jaw, the mean number of years that they had been edentulous was given as 5.9, and for the lower jaw, 4.1. Ninety-five women said they had full upper dentures and 165 said they had full upper and lower dentures. Within the group of 307 women who had lost upper teeth, 277 (59%) said they wore dentures (partial or full) and 23 of the sample (4.9%) said they had dentures but did not wear them. Seven women (1.5%) did not have dentures. For the group of 243 women who had lost lower teeth, 160 (34.1% of the sample) said they wore dentures; 70 (14.9% of the sample) had dentures but did not wear them, and 13 women (2.7% of the sample) did not have dentures. The most important reasons given for not wearing dentures were discomfort, poor fit, and need for adjustment. A total of 61 women (13.0% of the sample) offered one or more of these reasons. The condition of any dentures that were worn or brought to the examination was assessed by the dentist; 132 women (28.1% of the sample) had dentures that were judged not serviceable. Among the 217 women actually wearing upper dentures, at the time of the examination, 122 said that no adjustment, relining or replacement had been carried out in the past. In the 152 women actually wearing lower dentures, 98 stated that their dentures had never been serviced or replaced.

On dental examination, it was found that the mean number of missing teeth was 20.8 with a range of 32; the mean number of filled teeth was 3.6 with a range of 26. The mean number of teeth with restorable caries was 0.9 with a range of 0 to 13; the mean number of non-restorable carious teeth was 1 with a range of 0 to 31. For women with their own teeth, dental occlusion was abnormal in 105 (22.4% of the sample). Gingival calculus was found in 239 women. Plaque formation was present in 147 women and was severe in 63 women (13.4% of those examined). Evidence of periodontal disease was found as follows: 93 women (19.8% of the sample) had loose teeth; 107 women (22.8% of the sample) had pockets in their gums; 186 women had gingivitis, and of these, 124 (26.4% of the sample) had severe gingivitis.

Records were made of the dental attention required for the upper or lower prosthesis. It was found that 48 women needed a full upper denture, and 41 women needed their upper denture relined. For 12 women, who were not wearing their upper dentures, it was assumed that one was needed.

Similarly, 52 women needed a full lower denture and 41 women needed their lower denture relined. It was assumed that the 34 women not wearing their lower denture would require such a prosthesis.

The dental status of women in our sample population documented the degree of past neglect of their mouths and teeth. In order to examine this neglect factor realistically, it was unsuitable to rely on the "decayed-missing-filled" enumeration because evidences of neglect also pertained to dentures, whether worn and if serviceable. The Dental Neglect Index (DNI) was therefore developed to give the following definition: DNI = number of teeth with restorable caries (need fillings) or missing but replaced by serviceable dentures + $2 \cdot$ (number of missing teeth not replaced by serviceable dentures) + $3 \cdot$ (number of teeth with non-restorable caries (need extraction)). The mean D.N.I. was 38.1. (median 32.1, range 0-95).

The Dental Neglect Index was strongly negatively correlated with education ($r = -0.15$, $P < .001$), with family income at the time of Feldman's study ($r = -0.17$, $P < .001$), and with past employment (percent of adult life employed) ($r = -0.16$, $P < .001$). Present unemployment was also significantly associated with a high DNI ($r = .11$, $P = .011$). Less close, but still significant relationships were found with the number of pregnancies ($r = 0.10$, $P = .016$) and number of live-born children who died before they were one year old ($r = 0.09$, $P = .025$). Since this index was designed to measure past neglect rather than actual dental status, it is assumed that these correlations reflect the association of the DNI with personal neglect and poverty. It should not be inferred that dental status necessarily prevented past employment, for example, but rather that attitudes and other correlated sociocultural factors more difficult to measure directly caused the unemployment.

Motivation and Health Attitudes in Relation to Work

Information obtained from our women on their health-related work restrictions gave evidence on how they perceived their complaints and disabilities as interfering with their ability to perform in job situations. It is important to see that the common problems which they considered as obstacles to work were not specific diseases but rather conditions arising from emotional difficulties and poor physical fitness. Multiple positive responses were given to questions pertaining to subjective work restrictions. The most frequent difficulties cited were that they got nervous while working (9.6% of the sample), that their legs prevented them from doing a standing job (9.2% of the sample) and that their back interfered with their doing a standing job (9.2% of the sample) (Table 69).

The fact that the respondents admitted that nervousness was a limitation in the work situation has to be viewed in the context of their current symptoms. Among the most common complaints of the subjects were undue tiredness, insomnia, frequent headaches and nervousness. Although organic reasons for these complaints did exist among a few women, it was felt that in general, these were symptoms caused by depression or anxiety. Accordingly a new variable was computed which counted the number of these complaints stated by each subject, ranging from 0-4. This index, henceforth referred to as the number of nervous symptoms, was strongly correlated with employment status: those who were not working had more nervous symptoms (Kendall's tau c= -.16, $P < .0001$).

The subjects' attitudes to work as well as their actual health status were indicated by their responses to both the question "Has your health restricted the type of job you can hold?" (subjective work limitation) and by their response to the question "Does your health interfere with doing your own housework?" (subjective housework limitation). The responses to both these questions were strongly associated with the number of nervous symptoms ($\chi^2=48.5$, $P < .0001$) for subjective work limitation; $\chi^2=77.6$, $P < .0001$ for subjective housework limitation). The working women were very much less likely to have a subjective housework limitation ($P < .0001$). However, among the working women who stated that they did have health problems associated with housework, conditions were slightly more likely to be functional (i.e., exhaustion) rather than medical ($P < .05$). Women on welfare were slightly more likely to say their health interfered with their housework ($P < .005$). No relationship between welfare status and the type of health problem was established. Among the group who had "health" problems with housework, not only were there more complaints of nervous symptoms, but also the women were more likely to have functional rather than physical or medical health problems ($P < .02$). Functional problems included backache, psychosomatic symptoms, such as headache and exhaustion. Medical problems included acute infection, chest problems, heart problems, musculo-skeletal problems including arthritis, recent operations, etc. Fatter women in our sample were no more likely than the thin ones to

Table 69. Type of subjective work restriction stated by respondent.

	No. of women	% of total sample	% of those with subjective work restriction
Health has not restricted employment	310	66.1%	n.a.
Legs prevent standing job	43	9.2	27.2%
I get nervous while working	45	9.6	28.5
Back prevents standing job	43	9.2	27.2
Poor eyesight	16	3.4	10.1
Mental health problems (headaches, nerves, fatigue)	16	3.4	10.1
Heart problems, including high blood pressure	14	3.0	8.9
Poor hearing	13	2.8	8.2
Chronic bone or joint problems	12	2.6	7.6
Lame or crippled	12	2.6	7.6
Cannot do a job involving lifting or bending	12	2.6	7.6
Respiratory problems	8	1.7	5.1
They won't hire people with skin complaints	7	1.5	4.4
Late effects of accident or injury	6	1.3	3.8
Kidney, other urinary tract problems	6	1.3	3.8
Epilepsy	5	1.1	3.2
Endocrine gland problems	4	0.9	2.5
Obesity	4	0.9	2.5
Receive disability insurance	2	0.4	1.3
Other problems	17	3.6	10.8

Percentages add to more than 100.0% because of multiple positive responses per subject in some cases.

have "health" problems which were said to interfere with their housework. If there was a problem with housework, this was more likely to be medical among the fat women.

Those with a subjective work limitation due to "bad back" had more nervous symptoms ($P < .0001$) as did those with "leg problems" and "nerves" causing work restrictions, both also $P < .0001$. Likewise the presence of any subjective work limitation was associated with nervous symptoms ($P < .0001$). None of these variables were related to skinfold thickness (degree of fatness).

The multiplicity of variables significantly correlated with nervous symptoms indicate that these are at the nexus of many of the interrelationships. Cause and effect cannot be separated in these associations; but it can safely be said that these symptoms are sometimes secondary to physical disease and situational stress, but sometimes apparently primary. Whatever the original problem, the production of these symptoms is an added complication which makes the woman's own efforts to cope or intervention by others more difficult.

Very significant correlations with number of nervous symptoms ($P < .001$): Women with more headaches, insomnia, nervousness and tiredness were taking more medications ($r=.375$), especially sedatives and tranquilizers ($r=.33$). They had more illnesses found on the physical exam ($r=.19$), and more were sick, if accidental injuries were excluded ($r=.18$). More of them had limitations or contraindications to work found by the physician ($r=.21$); and they had more disabilities reported on the medical history ($r=.16$), especially disabilities in the "other" category, which included diabetes, renal disease, among others. They had more severe problems reported on the medical history both for the post-school period ($r=.34$), and for the whole medical history ($r=.29$). With all of these problems it is hardly surprising that fewer of the women with these symptoms were working ($r= -.15$).

Significant correlations ($P \leq .01, > .001$): Women with more nervous symptoms were less likely to have had a skilled job most recently ($r= -.13$). On the physical exam they were more likely to be diagnosed as mentally ill or retarded ($r=.12$), or as having musculo-skeletal disease ($r=.12$). On the medical history, the neurasthenic women had more severe problems coded during the school years ($r=.11$), and were more likely to have respiratory disabilities ($r=.11$). Their present or most recent job was not on the "better" end of the Census Bureau classification ($r= -.11$); they worked less in the past ten years ($r= -.11$), and were less likely to have a steadily employed husband ($r= -.11$).

Other correlations ($P \leq .02, > .01$): Better educated women reported fewer nervous symptoms ($r= -.10$).

Heterogeneity of the Sample with Respect to Work and Welfare

The population was not homogeneous with respect to life style. During the field survey, it was apparent that subgroups existed with differing background, education and socioeconomic status, or what an economist might call "permanent income". Collective effects of past experience were expected to be better determinants of potential for leaving welfare than such variables as current employment. Therefore a statistical separation was made, for descriptive purposes, of four groups of women, on the basis of welfare and employment history. It has been shown that the most valid indicators of social mobility are past work and welfare history, education and health. Indicators of chronic (and hence more intractable) poverty include: poor education (failure to graduate from high school or to obtain more than a grade school education); lack of health care (uncorrected visual defects; untreated dental problems); lack of family planning (inferred from large family size); lack of previous work experience (high percent of years since age 16 or school leaving, not working; lack of skilled or semi-skilled work experience); and lack of a working husband (husband absent or said not to be working). Self-neglect is primarily associated with welfare and unemployment or under-employment. Although this kind of description runs the risk of producing stereotypes, it provides a more accurate description of the population than any simple recitation of the characteristics of the whole sample; we also believe the differentiation of these groups to be meaningful in terms of future potential for these women.

In addition to those mentioned above, certain variables were used as indicators of less measurable underlying variables. For instance, the "dental neglect index" was computed by the following formula:

> Dental neglect index = number of teeth with restorable caries (need fillings) or missing but replaced by serviceable dentures + 2 · (number of missing teeth not replaced by serviceable dentures) + 3 · (number of teeth with non-restorable caries (need extraction)).

This index was used as an objective means of measuring the past and present neglect of the woman's personal appearance and health. For this reason teeth that had been decayed but were filled did not increment the index. The higher the value of the index, the greater the apparent neglect of the woman's dental health; this index was correlated with other measures of the women's health and attitudes, as well as with employment variables. Similarly, the response to the question whether the woman voted in the last presidential election was taken as a measure of her active interest and participation in community affairs.

In our population the "highly motivated group" (Table 70) was defined as having been off welfare either at the time of the Feldman study or in 1971, at the time of this study, and having worked most of the time since age 16 or leaving school. Differentiating them from other groups were the following characteristics: more of them were presently working, more of them were in semi-skilled jobs; more of them had graduated from high school; they had fewer children. At the time of Feldman's study, more reported satisfaction with their overall happiness, and more women (65.9%) in this group than in any other voted in the last presidential election. Examining health parameters, it was found that their subjective health had been better; fewer said their job type was restricted by ill health. Personal neglect was less evident in that smaller numbers of women in this

Table 70. Characteristics of the "motivated, advantaged group".

Group 1: Defined as having been off welfare either at the time of Feldman's study, or in 1971, at the time of this study - and having worked most of the time since age 16 or leaving school (total years worked/years since age 16 or school leaving > .50, mean = .78).

Characteristics:

Working husband present: 53%
Husband absent: 36%
Present welfare status: 91.2% off
Mean number of children: 4.42
Presently working: 73% (semi-skilled: 42%)
Mean dental-neglect index: 34.3
Subjective work restriction by health: 23%, yes
52.8% graduated from high school
7.7% with 8th grade or less education
Subjective interference with housework by health: 11%
Needs glasses: 3.4%
*Mean family income: $6,422
*Mean salary of woman: $2,374
*Voted in 1968 presidential election: 65.9%
*Overall reported happiness: 2.8 on a scale of 0 to 4

*From questionnaire responses of these same women approximately three years earlier in Feldman's (1972) study. (Raw data provided by Dr. Feldman.)

Table 71. Characteristics of the "neglected group".

Group 2: Defined by having been on welfare at the time of both studies, and by having been unemployed or not working most of their adult life, (total years worked/years since age 16 or school leaving < .50, mean = .24).

Characteristics:

Working husband present: 13%
Husband absent: 60%
Unemployed husband present: 27%
Present welfare status: on (by definition)
Mean number of children: 5.7
Presently working: 24% (semi-skilled: 20%)
Mean dental-neglect index: 42.8
Subjective work-restriction by health: 37%, yes
33.6% graduated from high school
24.4% with 8th grade or less education
Subjective interference with housework by health: 11%
Needs glasses: 14.4%
*Mean family income: $4,317
*Mean salary of women: $815
*Voted in 1968 presidential election: 42.7%
*Overall reported happiness: 2.7 of a scale from 0 to 4.

*From questionnaire responses of these same women approximately three years earlier in Feldman's (1972) study. (Raw data provided by Dr. Feldman.)

group, as against those in other groups, had uncorrected visual defects or untreated dental problems. Fifty-three percent had a working husband present.

The "neglected group" (Table 71) was defined as having been on welfare at the time of both studies and by having been unemployed most of their adult life. Comparing them with women in other groups, more were poorly educated; they had a larger number of children. Their past and present subjective health was worse than that of the highly motivated group, and they were more in need of glasses and dental care. Only 13% had a working husband present in the home.

The "traditional female group" (Table 72) was defined as having been off welfare at the time of one or the other of the studies and having been unemployed for most of their adult life. Neither their health nor their education was as good as the highly motivated group but lower indices of neglect, e.g., the dental neglect index, differentiated them from the neglected group.

Sixty-two percent of the women in this group had a working husband present and it is evident that his earning capacity was the single most important factor that had allowed them to escape from welfare dependence.

The "employed-welfare dependent" group (Table 73) was defined as having been on welfare at the time of both studies, but having worked most of their adult lives. Their work was in unskilled jobs. More women in this group said their job type was restricted by health reasons than women in other groups. Sixteen percent of women in this group had working husbands.

In considering the characteristics of women in these groups from the standpoint of future socioeconomic status it is clear that the highly motivated group has several advantages which demarcate them from the other groups and which we believe to be predictive of their independence from welfare in that they have a greater potential for continued employment. The "traditional female" group members are independent of welfare because they have working husbands. The other two groups are likely to remain on welfare. The neglected group will be on welfare because they have multiple disadvantages. poor education, large families, health problems and either no husband or one who is unemployed. The other employed group is likely to be on welfare because they have health problems which will limit employment and a lack of job skills. Their jobs are likely to be such that they personally cannot earn enough to get off welfare and they do not have husbands on whom they can rely for support.

The objective health variables, such as the examining physician's assessment of permanent disabilities or work limitations, and the number of illnesses diagnosed, did not significantly differ among the four groups. There were severe and chronic health problems prevalent in all four groups: however, the women in the highly motivated group were better able to cope with their health problems. This may partially have been due to better utilization of the available health care, as is shown by the lower dental neglect index in this group. But it is also likely that the skills

Table 72. Characteristics of the "traditional female group".

Group 3: Defined by having been off welfare at the time of one of the studies, and having been unemployed or not working for most of their adult life (total years employed/years since age 16 or school leaving, < .50, mean = .23).

Characteristics:

Working husband present: 62%
Husband absent: 18%
Unemployed husband present: 20%
Present welfare status: 88% off
Mean number of children: 5.26
Presently working: 32% (semi-skilled: 22%)
Mean dental-neglect index: 36.8
Subjective work restriction by health: 30%, yes
41.8% graduated from high school
21.3% with 8th grade or less education
Subjective interference with housework by health: 11%
Needs glasses: 5.3%
*Mean family income: $5,769
*Mean salary of woman: $897
*Voted in 1968 presidential election: 61.0%
*Overall reported happiness on a scale from 0 to 14: 2.8

[*] From questionnaire responses of these same women approximately three years earlier in Feldman's (1972) study. (Raw data provided by Dr. Feldman.)

Table 73. Characteristics of the "employed, welfare-dependent group".

Group 4: Defined by having been on welfare at the time of both studies, but having worked most of their adult lives (total years worked/years since age 16 or school leaving > .50, mean = .77).

Characteristics:

Working husband present: 16%
Husband absent: 75%
Present welfare status: on
Mean number of children: 4.58
Presently working: 48% (semi-skilled: 18%)
Mean dental-neglect index: 36.7
Subjective work restriction by health: 48%
43.3% graduated from high school
9.0% with 8th grade or less education
Subjective interference with housework by health: 34%
Needs glasses: 5.0%
*Mean family income: $4,658
*Mean salary of woman: $1,622
*Voted in 1968 presidential election: 49.3%
*Overall reported happiness on a scale fro 0 to 4: 2.3

[*] From questionnaire responses of these same women approximately three years earlier in Feldman's (1972) study. (Raw data provided by Dr. Feldman.)

possessed by the women in this group enabled them to be employed in work that was less taxing physically. The less advantaged groups probably took this into consideration in answering the question: Does your health restrict the type of job you can hold? It is important to see that for disadvantaged women, that is those not belonging to the highly motivated group, retraining and rehabilitation as well as marriage to an employed man are the most likely variables to alter socioeconomic status.

Utilization of Medical and Dental Services

Underutilization of health services could offer an explanation for our findings of medical and dental neglect. A large body of information was accumulated which showed inadequate use of health services but not necessarily underutilization.

Health attitudes strongly influenced health neglect. These attitudes were built on a basis of fear, ignorance and disallusion because it was difficult or impossible to obtain proper medical or dental attention. Evidence was also obtained that the women were unaware of health services available to them or had erroneous information about such services. (Tables 74-80).

The idea of preventive medicine was not only foreign to many women in our sample population, but our data suggest that it was uncommon among their parents. When asked whether or not they had had medical checkups, outside of school, when they were children, 294 women (62.7% of the sample) reported that they either did not go to the doctor as children or only if they were sick. While the remainder of the population had had medical checkups as children, only 107 women (22.8% of the sample) said they had such checkups every year or more than once a year. Thirty-five women (7.5% of the sample) had had medical checkups at more than three year intervals and 16 women had checkups every 2-3 years. (Table 81). On the other hand 371 (79.1% of the sample) reported that they had physical examinations in school (Table 82). As children 226 women (48.2% of the sample) went to the dentist for acute problems or not at all. The rest had dental checkups as children and 173 women (36.9% of the sample) said they had gone to the dentist once or more than once a year (Table 83). Although 297 women (63.3 per cent of the sample) stated that they had dental examinations in school, it was unclear whether these were performed by a dental hygienist or a dentist (Table 84). No relationship was found between annual medical checkups as children and present work status, subjective work limitation, chronic illness or welfare status. Some of the women, as children, may have had frequent examinations because they already had chronic health problems.

In response to questions about their current or recent health practices, 267 women (56.9% of the sample) said that they did not go to the doctor or only went if they were sick (Table 85). Similarly, 249 women (53.1% of the sample) reported that they did not go to the dentist or did not go except when they had acute dental problems (Table 86). It appears that they had availed themselves of certain kinds of health services. Thus 246 women (52.5% of the sample) had had their urine

Table 74. Number of women who mentioned each type of clinic when asked what clinics were available in their area: Broome County.

Type of clinic	No. of Women	% of women from this county	Was this type of clinic available in 1971?
Planned Parenthood or Family Planning Clinic	1	.5%	yes
Diagnostic and Screening Clinic	5	2.7	yes
Immunization Clinic	9	4.8	yes
Mental Health Clinic	4	2.2	yes
General Medical Clinic	39	21.0	emergency room only
Pediatric or Well Baby Clinic	40	21.5	yes
Dental Clinic	22	11.8	dental hygiene only
School Clinic	5	2.7	yes
Orthopedic Clinic	0	0	yes (hospital clinic)

Total number of women subjects residing in Broome County = 186

Table 75. Number of women who mentioned each type of clinic when asked what clinics were available in their area: Cayuga County.

Type of clinic	No. of Women	% of women from this county	Was this type of clinic available in 1971?
Planned Parenthood or Family Planning Clinic	0	0%	yes (hospital clinic)
Diagnostic and Screening Clinic	4	5.6	yes
Immunization Clinic	5	6.9	yes
Mental Health Clinic	1	1.4	yes
General Medical Clinic	13	18.1	emergency room only
Pediatric or Well Baby Clinic	15	20.8	yes
Dental Clinic	12	16.7	yes
School Clinic	0	0	immunization clinics
Orthopedic Clinic	0	0	yes

Total number of women subjects residing in Cayuga County = 72

Table 76. Number of women who mentioned each type of clinic when asked what clinics were available in their area: Chemung County.

Type of clinic	No. of Women	% of women from this county	Was this type of clinic available in 1971?
Planned Parenthood or Family Planning Clinic	0	0%	yes
Diagnostic and Screening Clinic	1	1.4	yes
Immunization Clinic	3	4.2	yes
Mental Health Clinic	2	2.8	yes
General Medical Clinic	32	44.4	emergency room only
Pediatric or Well Baby Clinic	1	1.4	yes
Dental Clinic	13	18.1	yes (for children only)
School Clinic	0	0	yes
Orthopedic Clinic	1	1.4	yes

Total number of women subjects residing in Chemung County = 72

Table 77. Number of women who mentioned each type of clinic when asked what clinics were available in their area: Cortland County.

Type of clinic	No. of Women	% of women from this county	Was this type of clinic available in 1971?
Planned Parenthood or Family Planning Clinic	0	0%	no
Diagnostic and Screening Clinic	1	2.6	yes
Immunization Clinic	2	5.3	yes
Mental Health Clinic	0	0	yes
General Medical Clinic	9	23.7	emergency room only
Pediatric or Well Baby Clinic	2	5.3	yes
Dental Clinic	3	7.9	yes
School Clinic	0	0	immunization clinics
Orthopedic Clinic	0	0	no

Total number of women subjects residing in Cortland County = 38

Table 78. Number of women who mentioned each type of clinic when asked what clinics were available in their area: Onondaga County.

Type of clinic	No. of Women	% of women from this county	Was this type of clinic available in 1971?
Planned Parenthood or Family Planning Clinic	1	2.5%	yes
Diagnostic and Screening Clinic	0	0	yes
Immunization Clinic	3	7.5	yes
Mental Health Clinic	0	0	yes
General Medical Clinic	9	22.5	yes
Pediatric or Well Baby Clinic	6	15.0	yes
Dental Clinic	1	2.5	yes
School Clinic	0	0	
Orthopedic Clinic	0	0	yes

Total number of women subjects residing in Onondaga County = 40

Table 79. Number of women who mentioned each type of clinic when asked what clinics were available in their area: Tompkins County.

Type of clinic	No. of Women	% of women from this county	Was this type of clinic available in 1971?
Planned Parenthood or Family Planning Clinic	1	1.6%	yes
Diagnostic and Screening Clinic	2	3.3	yes
Immunization Clinic	1	1.6	yes
Mental Health Clinic	2	3.3	yes
General Medical Clinic	1	1.6	yes
Pediatric or Well Baby Clinic	9	14.8	yes
Dental Clinic	1	1.6	no
School Clinic	0	0	yes
Orthopedic Clinic	0	0	yes

Total number of women subjects residing in Tompkins County = 61

Table 80. Family planning services available in 1971, in those counties in which our subject population resided.

County	Planned Parenthood Clinics	Other Family Planning Services	Out-Reach Workers
Broome	1 clinic	none	2 part-time
Cayuga	none	Hospital Clinic at Auburn Memorial	2: 1 city, 1 rural
Chemung	1 clinic, serves Chemung and Steuben	none	5
Cortland	none	none	none
Onondaga	1 clinic	Neighborhood health center County health clinic	none
Tompkins	1 clinic	Occasional assistance from Social Services	3

Table 81. Responses to question "As a child and teenager did you have medical checkups other than at school?".

	No. of women	% of sample
Never or only if sick	294	64.7%
Less than every 3 years	30	6.6
Every 2-3 years	23	5.1
Every year or more often	107	23.6
Don't know	15	--
Total	469	100.0%

Table 82. Responses to question "Did you have physical examinations at school?".

	No. of women	% of sample
Never or only if sick	49	10.7%
Less than every 3 years	17	3.7
Every 2-3 years	21	4.6
Every year or more often	371	81.0
Don't know	11	--
Total	469	100.0%

Table 83. Responses to question "During your childhood and adolescence, did you have regular dental checkups?".

	No. of women	% of sample
Never or only if dental problem existed	226	50.2%
Less than every 3 years	35	7.8
Every 2-3 years	16	3.6
Every year or more often	173	38.4
Don't know	19	--
Total	469	100.0%

Table 84. Responses to question "Did you have dental examinations at school?".

	No. of Women	% of sample
Never or only if dental problem existed	92	20.4%
Less than every 3 years	32	7.1
Every 2-3 years	29	6.4
Every year or more often	297	66.1
Don't know	19	--
Total	469	100.0%

Table 85. Responses to question "If you are not feeling sick, do you go to the doctor for medical checkups?".

	No. of women	% of sample
Never	267	57.1%
Less than every 3 years	27	5.8
Every 2-3 years	19	4.1
Every year or more often	154	33.0
No reply	2	--
Total	469	100.0%

Table 86. Responses to question "If you do not have a serious or painful dental problem, do you go to the dentist for dental checkups?".

	No. of women	% of sample
Never	249	53.3%
Less than every 3 years	16	3.4
Every 2-3 years	21	4.5
Every year or more often	115	24.7
No teeth or wear dentures	66	14.1
No response	2	--
Total	469	100.0%

checked for sugar in the last year and 117 more (24.9%) had had their urine checked in the last five years (Table 87). Also 201 women (42.9% of the sample) had had their sight checked within the last year and 165 women (35.2%) had had their sight checked, not in the last year, but within the last five (Table 88). Routine chest x-rays had been obtained by 180 women (38.4% of the sample) in the last year and by 132 more (28.1%) in the past 5 years (Table 89). Vaginal examinations were obtained annually or more often by 235 women (50.1% of the sample). However, though half the women had received this gynecological service 422 (90.0% of the sample) had never had advice from a family planning service (Table 90). Hearing checkups were relatively uncommon or infrequent. For example, 249 women (53.1% of the sample) had never had their hearing tested and 101 women (21.5% of the sample) had their hearing tested more than 5 years ago (Table 91).

Within the sample, 378 women (80.6%) stated that they had a regular family doctor (Table 92). Yet when asked how soon they would see a doctor when they were sick (for example, if they had a high fever), only 145 women (30.9%) said they would see him right away. Those who indicated they would wait a while, would wait longer or would never see the doctor except for an emergency (Table 93) were questioned about the reasons for not seeing the M.D. Common reasons given by this group were that they could care for themselves (50.1% of the total sample); that they had no money (21.7%); that they had no car (18.1%); that they were embarassed by the doctor (17.5%) or that they were afraid of what the doctor might find (16.8%). Multiple reasons were frequently given for delay or not seeing the doctor. It should be noted that 12.6% said that their doctor was prejudiced against seeing patients on Medicaid. Other important reasons given were that they could not leave a child or children (13.2%) or that there was no public transportation (14.3%) (Table 94).

Asked how they contacted the doctor when they were sick, 366 women (78.0 percent of the sample) reported that they phoned him and 42 women (9.0%) said that they used a neighbor's phone (Table 95). Contact was usually made with the doctor through an office call by 306 (65.2%) and 68 women (14.5%) stated that they usually saw a doctor in the emergency room at the local hospital. Sixteen women (3.4%) only had contact with the doctor by telephone (Table 96). The majority stated that they went to the doctor or to the clinic by car; 247 (52.7%) in their own family car and 69 (14.7%) in another person's car.

Delay in going to the dentist was admitted by 277 women (59.1% of the sample). Those who said they did delay were asked the reason. The most common explanation given was that they would prefer to wait until it was absolutely necessary (29.4% of the total sample), that they were afraid (27.9%) or that it was too expensive (19.4%). As with the reasons for delay in seeing a doctor, multiple answers were often given (Table 97).

Among the women, 272 (58.0% of the sample) were receiving Medicaid at the time of the study. If they were not on Medicaid they were asked if they had ever applied and only 27 (5.8%) replied negatively (Table 98).

Table 87. Response to question "Have you had your urine checked for sugar?".

	No. of women	% of sample
Never	69	14.8%
More than 5 years ago	35	7.5
In last 5 years	117	25.1
In last year	246	52.6
Don't know	2	--
Total	469	100.0%

Table 88. Responses to question "Have you had your sight checked, other than for a driver's license?".

	No. of women	% of sample
Never	67	14.3%
More than 5 years ago	36	7.7
In last 5 years	165	35.2
In last year	201	42.8
Total	469	100.0%

Table 89. Responses to question "Have you had a routine examination of your chest?".

	No. of women	% of sample
Never	65	14.0%
More than 5 years ago	88	18.9
In last 5 years	132	28.4
In last year	180	38.7
No response	4	--
Total	469	100.0%

Table 90. Responses to "If you do not have a female problem, do you go to the doctor for vaginal examinations?".

	No. of women	% of sample
Never or only if sick	170	36.3%
Less than every 3 years	41	8.8
Every 2-3 years	22	4.7
Every year or more often	235	50.2
No response	1	--
Total	469	100.0%

Table 91. Responses to "Have you had your hearing checked?".

	No. of women	% of sample
Never	249	53.2%
More than 5 years ago	101	21.6
In last 5 years	72	15.4
In last year	46	9.8
No response	1	--
Total	469	100.0%

Table 92. Responses to "Do you have a regular family doctor?".

	No. of women	% of sample
No	91	19.4%
Yes	378	80.6
Total	469	100.0%

Table 93. Responses to question "When you are sick (for example if you had a high temperature) how soon do you see a doctor?".

	No. of women	% of sample
Right away	145	31.1%
After I have waited a while	111	23.8
I put it off as long as possible	115	24.7
I never go unless for an emergency	95	20.4
No response	3	--
Total	469	100.0%

Table 94. Those women who reported they delayed going to the doctor were asked to respond positively or negatively to a series of possible reasons for such delay. Responses are given below, with the percent of the total sample giving each response. (Since 104 women (22.2%) reported they did not delay, the percentages for various responses to each specific reason add to 77.8%).

Reason	No, this doesn't apply	Yes, this does apply	No response
I'm afraid the doctor might hurt me	75.5%	2.1%	0.2%
I'm anxious because he might find something seriously wrong	60.8	16.8	0.2
I get embarrassed by physical examinations	60.3	17.5	0.0
For religious reasons	76.3	1.3	0.2
I think I can take care of things myself	27.5	51.1	0.2
It is very difficult to leave the children	64.2	13.2	0.4
I don't have the use of a car	59.7	18.1	0.0
There is no public transportation	63.3	14.3	0.2
I can't get a doctor	64.6	12.8	0.4
I can't afford it	55.7	21.7	0.4

Reason	Depends on the doctor (some are)	No, this doesn't apply	Yes, this does apply	No response
I think doctors are prejudiced against people who are on welfare	1.5%	22.7%	5.1%	43.5%
I think doctors are prejudiced against people who are on Medicaid	2.1%	51.4%	12.6%	11.7%

(Many subjects gave multiple reasons.)

Table 95. Responses to "When you are sick, how do you get in touch with the doctor?".

	No. of women	% of sample
Telephone him (from my home)	366	78.3%
Use a neighbor's phone because I don't have one myself, or sometimes a pay phone	42	9.0
Don't have a doctor so I go to the clinic or the Emergency Room at the hospital	46	9.9
Use a pay phone	4	.9
Go to the doctor's office (open office hours)	9	1.9
No response	2	-
	469	100.0%

Table 96. Responses to "How do you get to the doctor or clinic?".

	No. of women	% of sample
1. Walk	39	8.3%
2. In own car	247	52.7
3. In other person's car	69	14.7
4. Bus	15	3.2
5. Taxi	41	8.7
1 and/or 2	6	1.3
1 and/or 3	4	0.9
1 and/or 4	3	0.6
1 and/or 5	8	1.7
2 and 3, or 2, 3 and 5	12	2.6
2 and 5, 2 and 4 or 1, 2 and 5	7	1.5
3 and 5, or 1, 3 and 5	9	1.9
4 and 5	4	0.9
3 and 4	3	0.6
No response	2	0.4
	469	100.0%

Table 97. Those women who said they put off seeing a dentist were asked to respond to a list of possible reasons for delay, and to state which applied to their case. Multiple positive reasons were frequently given. (Of the total sample, 55% said they did delay, and hence the percentages for the yes and no answers to each question add to 55%.)

Reason	No, this doesn't apply	Yes, this does apply
There are no dentists around here who accept Medicaid patients	49.7%	5.3%
It is too expensive	35.6	19.4
I am afraid he might want to take my teeth out	47.3	7.7
I am waiting till it seems really necessary	25.6	29.4
I can't leave the children	51.6	3.4
I have transportation difficulties	50.5	4.5
I am really afraid of going to the dentist	27.1	27.9

For women who had applied for Medicaid and not received it, the major problem was ineligibility (151 women or 32.2% of the sample) (Table 99). In response to questions about their medical insurance, 269 women (57.4% of the sample) said that they had Medicaid. Blue Cross insurance was carried by 109 women (23.2% of the sample), Blue Shield by 108 (22.9%), and union or factory insurance by 78 women (16.6% of the sample). Thirty-four women (7.2%) of the sample had no medical coverage; 100 women had two kinds, and 26 three kinds, including Medicaid if applicable (Table 100).

Two other aspects of health service utilization were studied. Operatives and other women working in industry were questioned about the number of times they had consulted the factory nurse or doctor within the last year. Among the 115 women who responded, 30 said there was no doctor or nurse, 56 said they had never sought medical help at work and only 29 had received attention on one or more occasions. The major reason for consulting the factory medical staff was to obtain immediate help following an accident (Tables 101-102).

Very little use was made of rehabilitation or retraining programs. Considering the number of disabilities found, it is interesting that 388 women (82.7%) denied that they had a problem requiring such services. Five women (1.1%) said that they were not eligible and 54 women (11.5%) stated that they were or had been eligible. Actually only 11 (2.3%) had participated in mental or physical rehabilitation programs; 8 to obtain physical therapy, 1 in order to learn to walk again and 2 for continued mental health treatment. Vocational retraining programs (after illness) were only utilized by 28 women among whom 25 went into the programs to learn a new job. Most of these programs were run by the State Vocational Rehabilitation Service. Of those who enrolled in these programs, only 15 got a job afterwards, as a result of the training received. Hardly an impressive record! (Tables 103-109).

Medicaid records were examined for all the women participating in this program over the years 1968-71. Data collection from these records, which were made available by the county departments of Social Services, enabled us to compute actual utilization within the program of medical, dental and ancillary health services and to determine itemized costs in some instances. For the years 1968-1970, the average number of medical office visits by our women was 5 per annum, dropping to approximately 4 visits for the year 1971. The mean number of times that the women went to medical clinics at the hospital varied from 0.25 per annum in 1968 to 0.58 in 1971.

Per capital accident (emergency) room visits increased in the period 1968-1970 with a mean of 0.20/annum in 1968 to a mean of 0.46 in 1971. It should be noted that the increase in accident room and medical clinic visits corresponded in time with the decrease in the number of visits to doctors' offices. A similar inverse relationship was previously noted by Hochheiser, Woodward and Charney (1971, Effect of the neighborhood health center on the use of pediatric emergency departments in Rochester, New York. New England Journal of Medicine 285(3): 148-152) who found that with the advent of neighborhood health clinics, the utilization of the accident room diminished. Visits to opthalmologists among our sample

Table 98. Responses to question (asked of those who were not on Medicaid), "Have you ever applied for Medicaid?".

	No. of women	% of sample
No	27	5.8%
Yes	170	36.2
Have applied	272	58.0
	469	100.0%

Table 99. Responses to question "If yes (you have applied), why don't you receive Medicaid?".

	No. of Women	% of Sample	% of those responding
Not eligible	151	32.2%	91.0%
Couldn't fill out forms or finish filling out forms	1	0.2	0.6
Forgot to refile	4	0.9	2.4
In process	2	0.4	1.2
Didn't want it	8	1.7	4.8
	166	35.4%	100.0%

Table 100. Medical insurance coverage held by women in the sample.

Kind of insurance	No. of women	% of sample
None	34	7.2%
Medicaid	269	57.4
Private	23	4.9
Union or factory	78	16.6
Blue Cross (Group)	107	22.8
Blue Shield (Group)	105	22.3
Blue Cross (Private)	2	0.4
Blue Shield (Private)	3	0.6

(Some women held more than one kind of medical insurance; hence, these figures add to more than 100.0%)

Number of kinds held per respondent	No. of women	% of sample
None	34	7.3%
1	309	65.9
2	100	21.3
3	26	5.5
	469	100.0%

Table 101. Responses to "How many times in the past year did you consult the business/factory doctor or nurse?". (Asked of operatives and other women working in industry.)

	No. of women	% of those responding
Never	56	48.7%
1 to 2	16	13.9
3 to 4	5	4.3
5 to 6	4	3.5
9 to 10	1	0.9
> 10	3	2.6
No doctor or nurse	30	26.1
	115	100.0%

Table 102. Reasons given for consulting the factory doctor or nurse (each woman who had consulted medical personnel at work was asked the reason for her two most recent consultations; if she had only seen them once, this one was included.).

	No. of recent consultations
Work-associated accident	18
Non-work-associated accident	3
Acute infection	6
Long-term medical illness	1
Mental problem	8
Other	8

Table 103. Responses to question, "Have you ever been eligible for a rehabilitation or retraining program?".

	No. of Women	% of Sample
I have never had a medical problem that caused me to need such services	388	82.7%
I have had the need for such programs but I was not eligible	5	1.1
I was/am eligible for rehabilitation and/or retraining programs	54	11.5
Don't know	18	3.8
No response	4	0.9
	469	100.0%

Table 104. Responses to question, "Did you participate in the (rehabilitation or retraining) program?". (Asked of those who said they were or had been eligible.)

	No. of Women	% of Sample	% of those responding
No	18	3.8%	34.0%
Yes	35	7.5	66.0
	53	11.3%	100.0%

Table 105. Responses to, "Did you participate in a rehabilitation program?". (Asked only of the 35 women who said they had participated in a rehabilitation or retraining program.)

	No. of Women	% of Sample	% of those responding
No	24	5.1%	68.6%
Yes	11	2.3	31.4
	35	7.5%	100.0%

Table 106. Stated purpose of rehabilitation program in which respondent participated.

	No. of Women	% of Sample
To train me to walk again	1	0.2%
To give me physical therapy	8	1.7
Mental therapy	2	0.4

Table 107. Responses to, "Did you participate in a retraining program?". (Asked only of the 35 women who said they had participated in a rehabilitation or retraining program.)

	No. of women	% of sample	% of those responding
No	7	1.5%	20.0%
Yes	28	6.0	80.0
	35	7.5%	100.0%

Table 108. Responses to "If yes, what was the purpose of the (retraining) program?".

	No. of women	% of sample	% of those responding
To teach me a new job	25	5.3%	89.3%
To find out what kind of a job I could do	2	0.4	7.1
Both of above	1	0.2	3.6
	28	5.9%	100.0%

Table 109. Stated outcome of retraining program.

	No. of women	% of sample	% of those participating
I dropped out of the program	10	2.1%	35.7%
This did not help me get a job	3	0.6	10.7
I was then able to get a job	15	3.2	53.6
	28	5.9%	100.0%

Table 110. Use of medical services as determined by examination of Medicaid records of the women in the sample. Means given are calculated by dividing the total number of services of that type for the year in question by the total number of women who had some Medicaid expenditures during that year. Not all jurisdictions had records that could be examined for all four years, so the sample size varies somewhat, not only due to the number of women on Medicaid, but also due to whether records for that year were examined.

% of those women whose records were examined for the year, and who had some Medicaid expenditures during the year:

M.D. office visits	1968	1969	1970	1971
0	15.9%	18.8%	18.6%	20.1%
1	16.3	19.2	15.7	13.8
2	10.2	9.6	9.5	12.2
3	10.2	9.6	9.1	13.8
4	6.5	6.2	6.6	8.7
5	6.9	5.0	3.7	3.5
6-10	19.5	17.8	19.3	17.8
11-15	8.8	8.2	6.2	7.2
16-20	3.6	2.8	5.4	1.6
21-25	0.8	1.6	0.8	0.4
26 or more	1.2	1.6	3.8	1.2
	100.0%	100.0%	100.0%	100.0%
N:	246	260	237	254
Mean:	5.154	5.015	5.570	4.283
S.E.:	0.387	0.412	0.473	0.325

M.D. hospital visits	1968	1969	1970	1971
0	82.5%	80.8%	76.4%	80.0%
1	9.8	8.5	12.0	11.0
2	2.8	5.0	5.4	3.9
3	2.0	1.5	2.1	1.6
4	0.0	1.2	0.0	1.2
5	1.2	1.2	0.4	0.4
6	0.4	0.8	1.2	0.0
7 or more	1.2	1.2	2.5	2.0
	100.0%	100.0%	100.0%	100.0%
N:	246	260	237	254
Mean:	0.463	0.531	0.764	0.475
S.E.:	0.115	0.115	0.199	0.090

Table 110 Continued.

Clinic visits	1968	1969	1970	1971
0	88.2%	88.1%	83.6%	85.9%
1	5.3	5.4	11.8	4.7
2	4.1	3.1	2.1	4.3
3	1.2	1.2	0.4	0.8
4	0.4	0.4	0.4	0.8
5	0.4	0.8	0.8	1.2
6 or more	0.4	1.2	0.8	2.4
	100.0%	100.0%	100.0%	100.0%
N:	246	260	238	255
Mean:	0.252	0.338	0.282	0.576
S.E.:	0.061	0.089	0.056	0.167

Hospitalizations	1968	1969	1970	1971
0	81.3%	84.6%	80.2%	82.4%
1	16.3	11.2	14.0	13.7
2	1.2	3.5	4.5	3.1
3	0.8	0.8	0.4	0.8
4	0.4	0.0	0.8	0.0
	100.0%	100.0%	100.0%	100.0%
N:	246	260	242	255
Mean:	0.228	0.204	0.277	0.224
S.E.:	0.035	0.033	0.042	0.033

Accident room visits	1968	1969	1970	1971
0	85.8%	83.5%	80.6%	76.5%
1	10.2	11.9	15.3	13.3
2	3.3	3.5	2.1	5.1
3	0.4	1.2	0.8	3.1
4	0.0	0.0	0.8	0.4
5	0.4	0.0	0.4	0.8
6 or more	0.0	0.0	0.0	0.8
	100.0%	100.0%	100.0%	100.0%
N:	246	260	242	255
Mean:	0.199	0.223	0.273	0.455
S.E.:	0.037	0.035	0.044	0.073

Table 110 Continued.

Contraceptive advice and services	1968	1969	1970	1971
0	95.9%	96.9%	96.3%	94.5%
1	2.9	1.5	2.1	3.5
2	0.4	0.8	1.2	1.2
3	0.0	0.4	0.4	0.8
4	0.4	0.4	0.0	0.0
5 or more	0.4	0.0	0.0	0.0
	100.0%	100.0%	100.0%	100.0%
N:	246	260	242	255
Mean:	0.081	0.058	0.058	0.082
S.E.:	0.035	0.023	0.021	0.024

Visits to an opthalmologist	1968	1969	1970	1971
0	93.5%	93.5%	93.8%	94.1%
1	5.3	5.4	5.0	5.1
2	0.8	0.4	0.4	0.8
3 or more	0.4	0.8	0.8	0.0
	100.0%	100.0%	100.0%	100.0%
N:	246	260	242	255
Mean:	0.081	0.119	0.087	0.067
S.E.:	0.022	0.043	0.026	0.018

Visits to an optician or optometrist	1968	1969	1970	1971
0	72.0%	71.5%	59.6%	69.8%
1	20.3	14.2	28.7	20.0
2	6.5	11.2	8.3	8.2
3 or more	1.2	3.1	3.4	2.0
	100.0%	100.0%	100.0%	100.0%
N:	246	260	240	255
Mean:	0.370	0.477	0.592	0.427
S.E.:	0.042	0.055	0.060	0.047

Table 110 Continued.

New glasses	1968	1969	1970	1971
0	79.3%	76.5%	70.2%	76.9%
1	19.5	20.8	28.5	22.7
2 or more	1.2	2.7	1.2	0.4
	100.0%	100.0%	100.0%	100.0%
N:	246	260	242	255

Dental visits	1968	1969	1970	1971
0	66.8%	75.8%	76.9%	78.0%
1	11.5	10.0	9.1	10.6
2	13.1	10.0	6.6	4.7
3	4.1	1.9	2.9	2.4
4	3.3	1.5	1.2	2.8
5	0.0	0.8	2.1	1.2
6	1.2	0.0	0.0	0.0
7 or more	0.0	0.0	0.8	0.4
	100.0%	100.0%	100.0%	100.0%
N:	244	260	242	254
Mean:	0.705	0.458	0.566	0.469
S.E.:	0.078	0.059	0.089	0.069

New dentures	1968	1969	1970	1971
No	91.1%	96.9%	97.1%	96.5%
Yes	8.9	3.1	2.9	3.5
	100.0%	100.0%	100.0%	100.0%
N:	246	260	242	255

Table 110 Continued.

Visits to podiatrist	1968	1969	1970	1971
0	97.6%	96.2%	93.8%	94.5%
1 to 5	0.8	2.3	3.3	2.7
6 to 10	0.4	1.5	1.2	2.0
11 or more	1.2	0.0	1.6	0.8
	100.0%	100.0%	100.0%	100.0%
N:	246	260	241	255
Mean:	0.244	0.169	0.411	0.322

Visits to chiropractor	1968	1969	1970	1971
0	97.2%	98.0%	95.9%	98.0%
1 to 5	2.0	0.8	2.9	0.8
6 to 10	0.0	0.4	0.4	0.4
11 to 15	0.4	0.0	0.4	0.4
16 or more	0.4	0.8	0.4	0.4
	100.0%	100.0%	100.0%	100.0%
N:	246	260	242	255
Mean:	0.191	0.188	0.248	0.220
S.E.:	0.097	0.103	0.113	0.140

Physical therapy visits	1968	1969	1970	1971
0	98.0%	99.2%	97.6%	97.6%
1-5	1.2	0.8	0.8	2.0
6-10	0.4	0.0	0.8	0.0
11-15	0.0	0.0	0.4	0.0
16-20	0.4	0.0	0.0	0.0
21 or more	0.0	0.0	0.4	0.4
	100.0%	100.0%	100.0%	100.0%
N:	246	260	242	255
Mean:	0.138	0.031	0.236	0.161
S.E.:	0.081	0.022	0.118	0.119

Table 110 Continued.

Transportation charges	1968	1969	1970	1971
0	87.4%	88.5%	93.8%	92.1%
1-5	7.3	4.2	4.1	5.9
6-10	3.5	2.7	0.4	0.8
11-15	0.8	1.5	0.0	0.0
16 or more	0.0	3.1	1.7	1.2
	100.0%	100.0%	100.0%	100.0%
N:	246	260	242	255
Mean:	0.598	1.135	0.582	0.498
S.E.:	0.124	0.262	0.267	0.188

X-rays	1968	1969	1970	1971
0	88.6%	88.5%	85.5%	87.4%
1	8.1	8.8	9.9	9.0
2	2.5	2.3	2.1	1.6
3 or more	0.8	0.4	2.5	2.0
	100.0%	100.0%	100.0%	100.0%
N:	246	260	242	255
Mean:	0.167	0.146	0.219	0.192
S.E.:	0.037	0.027	0.040	0.040

Laboratory work	1968	1969	1970	1971
0	67.1%	63.1%	56.2%	56.1%
1-2	26.4	30.4	32.6	33.7
3-4	5.3	4.6	8.3	7.4
5-6	0.8	0.8	2.5	1.6
7 or more	0.4	1.1	0.4	1.2
	100.0%	100.0%	100.0%	100.0%
N:	246	260	242	255
Mean:	0.614	0.650	0.860	0.925
S.E.:	0.075	0.080	0.082	0.093

EKG	1968	1969	1970	1971
None	98.4%	98.5%	97.9%	98.0%
1	1.2	1.5	2.1	1.6
2 or more	0.4	0.0	0.0	0.4
	100.0%	100.0%	100.0%	100.0%
N:	246	260	242	255
Mean:	0.020	0.015	0.021	0.024
S.E.:	0.011	0.008	0.009	0.011

varied little over the four-year period, the means being 0.07-0.12 per capita per annum. More frequently, women on Medicaid went to opticians or optometrists and the mean number of these visits varied from 0.37-0.59 per capita per annum over the 1968-71 period. Records of these and other health services obtained by women over this period are given in Table 110.

It is interesting to note that while the per capita annual number of physician visits approximated to the national average of 4.5 (U.S. Department of Health, Education and Welfare, Public Health Service, National Office of Vital Statistics, Vital Health Statistics: Age patterns in medical care, illness and disability. United States, July 1963-June 1965, (G. A. Gleeson) Washington, D. C.: Government Printing Office, 1966, Series 10: No. 32), the mean number of dental visits per capita per annum varied from 0.7 in 1968 to 0.47 in 1971, figures which are below the U.S. average of 0.8 for persons with an annual family income below $4000 (Idem. Vital and Health Statistics. Volume of dental visits, United States, July 1963-June 1964 (A. J. Alderman), Washington, D.C., Government Printing Office, 1965, Series 10, No. 23). These differences may reflect a disinclination on the part of dentists to take patients on Medicaid. Use of health services which might be termed supportive rather than preventive or corrective was considerable. Our data show that the women visited the podiatrist about as often as they went to the accident room, and they attended chiropractors' offices considerably more frequently than they went to the mental health clinic.

In a population who had a high incidence of obesity and associated cardiovascular disease, it is notable that very few had had electrocardiograms under the Medicaid program. Low utilization of services for contraceptive advice corresponded to the statements by the women on the subject of family planning. Records on the numbers of hospitalizations and visits from physicians while the subjects were in the hospital are also given in Table 110.

Total Medicaid costs were computed for the years 1968-1971. When corrections were made for inflation over these years, a 28% drop from the 1968 level of non-pharmacy medical expenses was seen. This could be partly explained by a 20% decrease in fees paid to physicians for office visits, made in mid-1969. However, this change in expenditures occurred in spite of an aging sample. The average U.S. per capita health expenditure for 1966, in 1967 dollars, was $227.40 for medical expenses and $26.45 for drugs, including both prescription and over the counter drugs (Rice, D. P. and Cooper, B. S. National Health Expenditures, 1950-1966, Social Security Bulletin 31: 3-22, April 1968; and Bureau of Labor Statistics, 1971, Handbook of Labor Statistics). Although medical expenses were similar to U.S. averages (despite the prevalence of chronic disease in the sample), pharmacy charges were much higher for our population than for the U.S. and increased over the years studied. There are two explanations for these differences. Some of the differences in pharmacy charges are accounted for by administrative costs (in Tompkins County, for example, pharmacies in 1968-69 were allowed a 40% mark-up for clerical costs on Medicaid bills; in 1970 this changed to a $1.80

fee/Medicaid charge). However, we strongly suspect from the drug histories obtained from our women, that the remaining difference must be attributed to the women's habit of taking palliatives such as sedatives and tranquilizers on prescription in lieu of optimal medical treatment.

These findings on Medicaid utilization reflect certain unfortunate aspects of low income health care. It is patch-up medicine. As Bergner and Yerby have explained the situation, "The poor are less inclined to take preventive measures and delay longer in seeking medical care. When they do approach health practitioners, they are more likely to select subprofessionals or the marginal practitioners found in their neighborhoods...Unfortunately, ...expensive Medicaid program does nothing to ensure that comprehensive care becomes the standard care." (Bergner, L. and Yerby, A. S. Low Income and Barriers to Use of Health Services. New Eng. J. Med. 278: 541-546, 1968.)

Availability of Health Services

In considering the availability of health services to our sample population, it must be emphasized that such factors as domicile, transportation, economic status as well as work or family commitments influenced the ability of the women to obtain requisite care. It is not enough to define the location of physicians, hospitals and clinics because such records fail to take account of the problems which the women may have encountered in reaching needed services. Health services which are described in various manuals and monographs on Upstate New York, were not necessarily available to our women. However, since there is no adequate study of the relationship between the level of health care offered and the people who can or cannot take advantage of these resources, our major indicator of non-availability is non-utilization. It is realized that non-utilization also reflects poor health attitudes.

Physician Resources

In a study of the distribution of general and specialist physicians in Upstate New York (Dombrower, B. C., Helms, W. D. and Richmond, G. M. Central New York Physician Resources. ALPHA, RMP, HRPC, Mid-State and NY-Penna., April 1972) it was shown that predominantly rural counties have lower physician-population ratios than the more urban counties. The differences were less pronounced for primary care than for the specialty groups. The predominantly rural counties had higher percentages of older physicians (Table 111). Within the counties from which our population was drawn (excluding Chemung), the highest physician-population ratios were present in Onondaga (1.63), Tompkins (1.43) and Broome (1.32) Counties. These data reflect the concentrations of medical personnel in Syracuse, Ithaca and Binghamton which are determined by the presence of a medical school, the presence of a major university and the location of larger hospitals. The two lowest physician to population ratios were found to exist in Cayuga (0.86) and Cortland (0.87) Counties. These same general trends were followed in the data on the number of physicians offering primary care in the counties surveyed. The number of doctors

Table 111. Physicians by specialty group, age and county, and physician-population ratios by specialty group. Reproduced from Dombrower, B.C., Helms, W.D. and Richmond, G. M. Central New York Physician Resources. ALPHA, RMP, HRPC, Mid-State and NY-Penna., April, 1972, by permission.

PHYSICIANS BY SPECIALTY GROUP, AGE, AND COUNTY

	ALL PHYSICIANS		PRIMARY CARE		OTHER MEDICAL SPECIALISTS		SURGICAL SPECIALISTS		PSYCHIATRY & NEUROLOGY		OTHER SPECIALTIES	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCEN
BROOME	293	100.0	142	100.0	10	100.0	89	100.0	25	100.0	27	100.0
UNDER 39	62	21.2	39	27.5	2	20.0	14	15.7	3	12.0	4	14.8
40 - 49	87	29.7	39	27.5	2	20.0	28	31.5	4	16.0	14	51.9
50 - 59	64	21.8	29	20.4	4	40.0	22	24.7	6	24.0	3	11.1
60 PLUS	80	27.3	35	24.6	2	20.0	25	23.1	12	48.0	6	22.2
CAYUGA	67	100.0	35	100.0	3	100.0	21	100.0	2	100.0	6	100.0
UNDER 39	12	17.9	6	17.1	1	33.3	2	9.5	1	50.0	2	33.3
40 - 49	14	20.9	7	20.0	1	33.3	5	23.8	-	-	1	16.7
50 - 59	21	31.3	13	37.1	1	33.3	5	23.8	-	-	2	33.3
60 PLUS	20	29.9	9	25.7	-	-	9	42.6	-	50.0	1	16.7
CORTLAND	40	100.0	21	100.0	1	100.0	12	100.0	1	100.0	5	100.0
UNDER 39	6	15.0	4	19.0	-	-	1	8.3	-	-	1	20.0
40 - 49	9	22.5	3	14.3	-	-	4	33.3	1	100.0	1	20.0
50 - 59	15	37.5	6	28.6	1	100.0	7	58.3	-	-	1	20.0
60 PLUS	10	25.0	8	38.1	-	-	-	-	-	-	2	40.0
ONONDAGA	768	100.0	349	100.0	32	100.0	224	100.0	74	100.0	89	100.0
UNDER 39	266	34.6	93	26.6	9	28.1	96	42.8	28	37.8	40	45.0
40 - 49	223	29.0	98	28.1	8	25.0	65	29.0	25	33.8	27	30.3
50 - 59	147	19.1	76	21.8	5	15.6	39	17.4	10	13.5	17	19.1
60 PLUS	132	17.2	82	23.5	10	31.2	24	10.7	11	14.9	5	5.6
TOMPKINS	110	100.0	60	100.0	6	100.0	30	100.0	9	100.0		100.0
UNDER 39	22	20.0	9	15.0	2	33.3	9	30.0	1	11.1		20.0
40 - 49	23	20.9	10	16.7	1	16.7	7	23.3	4	44.4		20.0
50 - 59	34	30.9	24	40.0	-	-	7	23.3	1	11.1		40.0
60 Plus	31	28.2	17	28.3	3	50.0	7	23.3	3	33.3		20.0

Table 111- Continued.

PHYSICIAN - POPULATION RATIOS

BY SPECIALTY GROUPS

	Total Population	ALL PHYSICIANS		PRIMARY CARE		OTHER MEDICAL SPECIALISTS		SURGICAL SPECIALISTS		PSYCHIATRY & NEUROLOGY		OTHER SPECIALTIES	
		Total	Per 1000 Pop.	Total	Per 1000 Pop.	Total	Per 1000 Pop.	Total	Per 1000 Pop.	Total	Per 1000 Pop.	Total	Per 1000 Pop.
NEW YORK STATE	18,236,967	30,687	1.683	14,663	.804	1,790	.098	7,297	.400	4,140	.227	2,797	.153
REGIONAL MEDICAL PROGRAM	1,691,965	2,037	1.204	1,013	.599	69	.041	581	.343	186	.110	188	.111
HRPC	1,648,034	1,986	1.205	985	.598	68	.041	569	.345	182	.110	182	.110
ALPHA	836,158	1,089	1.302	531	.635	45	.054	313	.374	89	.106	111	.133
—Cayuga	77,439	67	.865	35	.452	3	.039	21	.271	2	.026	6	.077
—Cortland	45,894	40	.872	21	.458	1	.022	12	.261	1	.022	5	.109
Madison	62,864	47	.748	29	.461	2	.032	13	.207	1	.016	2	.032
—Onondaga	472,185	768	1.626	349	.739	32	.068	224	.474	74	.157	89	.188
Oswego	100,897	57	.565	37	.368	1	.010	13	.129	2	.020	4	.040
—Tompkins	76,879	110	1.430	60	.780	6	.078	30	.390	9	.117	5	.065
MID-STATE	273,037	354	1.297	169	.619	9	.033	100	.187	51	.920	25	.003
Herkimer	67,441	42	.623	31	.460	1	.015	6	.089	3	.044	1	.015
Oneida	205,596	312	1.143	138	.505	8	.029	94	.344	48	.176	24	.088
NORTH COUNTRY	268,074	242	.903	132	.492	5	.019	65	.242	20	.075	20	.075
Franklin	43,931	50	1.138	27	.615	1	.028	12	.273	4	.091	6	.137
Jefferson	88,508	85	.960	47	.531	2	.023	28	.316	3	.034	5	.056
Lewis	23,644	8	.338	8	.338	-	-	-	-	-	-	-	-
St. Lawrence	111,991	99	.884	50	.446	2	.018	25	.223	13	.116	9	.080
NY-PENN	314,696	352	1.118	181	.575	10	.031	103	.327	26	.083	32	.102
—Broome	221,815	293	1.321	142	.640	10	.045	89	.401	25	.113	27	.122
Chenango	46,368	35	.755	23	.496	-	-	9	.194	-	-	3	.065
Tioga	46,513	24	.516	16	.344	-	-	5	.107	1	.021	2	.043

Table 112. Number of patients discharged and average length of stay, by mode of payment, for nine hospitals in the study area.

Hospital	Discharges		Average Stay(days)	
	Medicaid	Other	Medicaid	Other
Community General Hospital Syracuse, New York	1,060	14,655	6.0	6.7
Tompkins County Hospital Ithaca, New York	1,113	9,054	5.0	6.6
Our Lady of Lourdes Memorial Hospital Binghamton, New York	899	11,831	6.5	7.9
Upstate Medical Center Syracuse, New York	1,895	7,828	9.3	10.5
Crouse-Irving Memorial Hospital Syracuse, New York	2,766	20,574	5.9	6.7
Cortland Memorial Hospital Cortland, New York	1,177	6,786	5.6	7.2
Charles S. Wilson Memorial Hospital Johnson City, New York	1,569	15,386	8.1	8.9
Binghamton General Hospital Binghamton, New York	2,471	11,797	6.9	8.4
Auburn Memorial Hospital Auburn, New York	1,102	8,584	9.4	9.3

giving primary care (in general or community medical practice) per thousand of population in the different counties were as follows: Onondaga 0.74, Tompkins 0.78, Broome 0.64, Cayuga 0.45 and Cortland 0.46. It is evident that Cayuga and Cortland Counties were deficient, both in the total number of physicians available and also in those who devoted themselves to general practice. However, even in the counties better served, the actual availability of physicians to low-income women was inadequate. For example, in a 1972 survey of emergency room utilization in Tompkins County 50% of the 576 persons questioned said that the emergency room of the Tompkins County Hospital was their usual source of treatment. In this same population, 21.1% indicated that the emergency room was chosen because it was the most convenient source of care and only 15.6% normally relied on a physician or medical group. Over one-third of the persons questioned stated that they did not have a family physician. When asked their reason for not having a physician, 29.5% said they did not know one, and 20.5% stated that they could not get one. Among the remaining respondents, 15.4% indicated that they did not have a private physician because they utilized the services of the accident room. Those with no medical insurance had a smaller proportion of family physicians than did the general sample. Unemployed persons were less likely to have a personal physician than were the working groups. Those in the technical and skilled occupational categories were most likely to respond positively to the question concerning family physicians (Bridgeman, D. P., Homer, G. M., Howard, B. L., Rice, C. E. and Thompson, R. P., Tompkins County Hospital Emergency Room Utilization Study).

In another area survey, conducted by the Sloan Institute of Hospital Administration at Cornell University, in this case of Southern Cayuga County, 28.7% of a population of 783 persons indicated that they were unable to see a doctor. When asked the reason, 11.4% stated that no doctor was available and 5.4% said that doctors in the area were not taking new patients. If the respondent had a regular doctor, it was more likely that he had been seen recently. Even among those who said they had a regular doctor, comments indicated that the physician may have been for the children or some particular segment of the household. Large distances had to be travelled in order for the local population to obtain care. The median distance travelled by people from Southern Cayuga County was in the range of 11-15 miles, with the greatest number of respondents indicating that they travelled 11-20 miles to get to a doctor's office. The greatest number of doctors' offices were located in the larger population centers outside the Southern Cayuga County area (Howard, B. L., Mayerhofer, J. J., Sherwood, J. M., Steinwald, D. F. and Trull, D. J. Survey of Health Needs of Southern Cayuga County. April, 1972).

It is apparent that though the availability of physicians to our population was undoubtedly influenced by local factors such as distance from the doctor's office in rural communities, as well as low physician-population ratios in those same communities, non-availability of primary care by a family physician was also determined by the socio-economic status of the individuals. Another determinant of non-availability may have been that many physicians in the area were close to retirement and may not have been seeking to enlarge their practice, especially by inclusion of low-income or Medicaid patients.

As alternates to primary care by a family physician, women such as those in our population utilized the accident room or relied on palliation of their medical problems by medications. Our data on prescription drug usage is indicative of the non-availability of family physicians as well as of the health attitudes of the recipients. Our women on Medicaid had total per capita medical expenditures comparable to the U.S. average but their pharmacy charges were in excess of the U.S. figures. Although these differences can in part be due to administrative costs, charged to Medicaid by the pharmacies, these costs do not account for the ratio of drug to medical expenses for our Medicaid population (Table 37).

Dentist Resources

In 1969 figures for dentist-to-population ratios by state show that New York occupied a favorable position as compared to other states and as compared to the U.S. as a whole. New York State had a dentist-to-population ratio of 1:1232, whereas for the U.S. the figure was 1:1693 (Distribution of dentists in the United States by state, region, district and county (1970). Bureau of Economic Research and Statistics, American Dental Association). However, within the Upstate counties, where the survey was conducted, the dentist-to-population ratios were not as good. The same trend was noticeable as for the distribution of physicians in that predominantly rural counties had less favorable ratios than the urban counties. The worst situation pertained to Cortland County where the dentist-to-population ratio was 1:3243. This was the county that in our survey had the highest tooth fatality and the highest number of edentulous women. Factors determining the lack of delivery of dental care to our population are described in the appended thesis by Ms. Watson (Appendix H).

Clinics

The six counties varied with respect to clinic services. Tompkins, Cayuga, Chemung, Broome, Onondaga and Cortland Counties all had diagnostic and screening clinics. However, only Tompkins and Onondaga Counties had general medical clinics, and in Tompkins these were only available to Cornell and Ithaca College students. Dental clinics were open in all except Tompkins County. However, in Chemung County the dental clinic was only available to children, and in Broome County, the only services supplied by the dental clinic were those related to dental hygiene. Family planning clinics were available in all except Cortland County but in Cayuga County the only family planning clinic was at the hospital in Auburn. Family planning services were poor not only with respect to clinics but also in that there were few out-reach workers. Mental health clinics were available in all the counties. Other than Onondaga

County, which was reasonably well-served by clinics at the Upstate Medical Center and by the Neighborhood Health Center, there was a paucity of clinic services for our population and particularly for those in rural areas. Our women were also largely unaware or confused about the availability of those clinics that did exist (Tables 74-80).

Hospitals

Professional activity studies of the area hospitals indicated that inpatient services for Medicaid as well as for other patients were adequate. Discharge analyses for 1971 show that in the various hospitals, where our women said they had received treatment, the average length of stay of Medicaid versus other patients differed, but there was no general trend indicating that Medicaid patients were in the hospital for a lesser or greater time (Table 112). It was noted that at the Upstate Medical Center, and at the Auburn Memorial Hospital, stays for both Medicaid and non-Medicaid patients were longer than elsewhere, probably indicating a lower pressure for beds, and the referral of more serious cases to Upstate.

Employer Attitudes and Practices

Eighty-three employers or personnel officers in establishments where the women were working participated in a study designed to discover health-related reasons for hiring and firing, provisions of health care for employees, as well as their attitudes toward employment of women on welfare. Questionnaires were administered by trained workers on our staff. Among the respondents, 32 were personnel officers, 8 were owners of business, 35 were managers who were administratively in charge, 2 were other managerial staff, and 4 were members of the medical staff of the business establishments (Table 113). The places of employment where interviews were obtained included the following categories: factories and workshops or manufacturing concerns (24), transport, communications and public utilities (1), wholesale and retail businesses (9), finance, insurance and real estate (1), business repair services (3), personal service establishments (8), professionally related (concerns other than hospitals) (19), public administration buildings (2), hospitals and nursing homes (13), and restaurants (3) (Table 114).

The total number of skilled female employees varied from 0-1030 (mean 53.51, median 3.75); semiskilled female employees varied from 0-750 (mean 57.33, median 10.50); unskilled female employees varied from 0-485 (mean 87.82, median 27.5). Within these concerns, the total number of men employed varied from 0-2910 (mean 223.28, median 53.00). Total skilled employees varied from 0-1580 (mean 135.82, median 23.63); total semiskilled employees from 0-909 (mean 94.05, median 18.00); and total unskilled from 0-1100.00 (mean 156.30, median 48.5). There were a large number of employees who were unclassified by the respondents or through business records according to sex or skill class (range 0-9227.00, mean 247.52). Among female employees, many were unclassified according to skill class (range 0-4194.00, mean 89.03) (Table 115). It was obvious to the interviewers that the respondents had a variable knowledge about their employees and that accessible employee records varied in their accuracy.

Table 113. Respondents who answered employer's questionnaire.

Position	Number	% of Respondent
Personnel officer	32	39.5%
Owner	8	9.9
Manager-administrator	35	43.2
Accountant, business manager	2	2.5
Member of medical staff	4	4.9
Other	2	--
	83	100.0%

Table 114. Places of employment where interviews were obtained from employers.

Type of Industry	Number	Percent
Manufacturing	24	28.9%
Transport, communications and public utilities	1	1.2
Wholesale and retail trade	9	10.8
Finance, insurance and real estate	1	1.2
Business and repair services	3	3.6
Personal services	8	9.6
Professional and related, not hospitals	2	2.4
Public administration	2	2.4
Hospitals and nursing homes	13	15.7
Restaurants (food services)	3	3.6
	83	100.0%

Table 115. Number of skilled, semiskilled, unskilled and unclassified total and female employees among the respondents to the employer's questionnaire.

Skill class	Mean number of employees ± standard error	Mean number of female employees ± standard error
Skilled	135.8 ± 31.1	53.5 ± 16.9
Semi-skilled	94.1 ± 18.8	57.3 ± 13.1
Unskilled	156.3 ± 26.3	87.8 ± 14.4
Unclassified	247.5 ± 139.8	89.0 ± 53.9

Medical problems that a substantial number of the respondents perceived as absolute or relative grounds for not employing an applicant varied from severe disability such as blindness or loss of function of both arms, to moderate disabilities, such as back problems or skin disease (Table 116). Conditional hiring in the presence of disability or illness was dependent on the job, the applicant's skill, or on the individual. It is important to note that 78.2% of respondents believed that back problems were absolute or relative grounds for not hiring and 63.3% of respondents thought that dermatitis or other skin disease was an absolute or relative grounds for refusal of an applicant. These attitudes are obviously conditioned by experience of occupational risk and compensation cases.

Common medical problems found in our population and believed to be grounds for non-employment include, in addition to back problems, chronic bronchitis and emphysema, history of heart disease, history of mental illness, and obesity. A history of alcoholism was not considered to be any more important as a contraindication to employment than obesity.

The diseases and disabilities considered most commonly as grounds for terminating employment were similar to those which would deny the applicant employment in the first place (Table 117).

Ten respondents (12%) said they would terminate the employment of women on Workman's Compensation and three respondents stated that if a woman was on Workman's Compensation the decision as to whether she would be fired or not would depend on her job. Six said it would depend on job availability, 6 said it would depend on her job record, 22 said it would depend on her disability, 1 said the business had no specific policy, and 5 said they did not know what action would be taken (Table 118). Some respondents responded positively to more than one of these possibilities.

In reply to questions concerning employment of women on New York State Disability Insurance 18 (21.7%) said they would terminate employment under this circumstance, 2 said that whether they would fire women on NYS Disability Insurance would depend on the job, 7 said it would depend on job availability, 5 said it would depend on job record, 17 said it would depend on the disability, 2 said they did not know what action would be taken, and 8 said that the question did not apply. Again, multiple positive responses occurred (Table 119).

When asked whether health services were available to employees, 82 respondents replied affirmatively. Availability of a first aid cabinet was confirmed by 79. Sixty-nine said that a room with a couch was available to employees, 35 stated that a medical office was available, 9 said that a comprehensive health clinic was available, 13 stated that they were a medical facility, and 7 described other health services as being available to their workers.

Among the respondents, 57 said that their business employed health service personnel, 12 employed physicians full time, 25 employed

Table 116. Medical problems perceived by respondents to the employer's questionnaire as grounds for not employing an applicant.

Conditions	% responding that they absolutely would not hire a person with this condition	% responding that they might hire such a person, depending on the job, the person, etc.	Total % responding that such a condition was either absolute or relative grounds for not hiring an applicant
Blindness-both eyes	69.51%	30.49%	100.0%
Loss or loss of function - both arms	70.73	24.39	95.12
Deafness-unable to talk	51.22	39.02	90.24
Loss or loss of function - both legs	43.90	42.68	86.59
Loss or loss of function - 1 arm or hand	24.39	54.88	79.27
Back problems	15.38	62.82	78.21
Deafness-able to talk	26.83	50.00	76.83
Mild mental retardation	12.20	62.20	74.39
Loss or loss of function - 1 leg	14.81	55.56	70.37
Dermatitis or other skin disease	17.72	45.57	63.29
Speech impairment	4.88	53.66	58.54
Chronic bronchitis and emphysema	18.52	30.86	49.38
Epilepsy	19.98	37.80	48.78
History of heart disease	8.54	39.02	47.56
History of mental illness	10.96	35.37	46.34
Obesity	15.85	28.05	43.90
Blindness-one eye	4.88	37.80	42.68
History of alcoholism	19.51	21.95	41.46
Asthma	2.44	28.05	30.49
High blood pressure	2.44	28.05	30.49
Facial disfigurement	2.44	23.17	25.61
Missing or unsightly front teeth	2.44	21.95	24.39
Peptic ulcers	2.44	15.85	18.29
Diabetes	2.47	13.58	16.05
History of tuberculosis (non-infective)	4.88	10.96	15.85

Table 117. Medical problems perceived by respondents to the employer's questionnaire as grounds for terminating an employee.

Conditions	% responding that they absolutely would fire a person with this condition	% responding that they might fire such a person, depending on the job, the person, etc.	Total % responding that such a condition was either absolute or relative grounds for firing
Loss or loss of function - both arms	69.51%	25.61%	95.12%
Blindness-both eyes	67.07	28.05	95.12
Deafness-unable to talk	51.22	37.80	89.02
Loss or loss of function - both legs	43.90	43.90	87.80
Loss or loss of function - 1 arm or hand	23.17	54.88	78.05
Back problems	12.82	64.10	76.92
Deafness-able to talk	26.83	48.78	75.61
Mild mental retardation	12.35	62.96	75.31
Loss or loss of function - 1 leg	14.81	55.56	70.37
Dermatitis or other skin disease	16.46	45.57	62.03
Speech impairment	4.88	53.66	58.54
Chronic bronchitis and emphysema	18.52	30.86	49.38
Epilepsy	10.98	37.80	48.78
History of mental illness	12.20	35.37	47.56
History of alcoholism	15.85	30.49	46.34
Obesity	13.41	30.49	43.90
History of heart disease	4.88	39.02	43.90
Blindness - one eye	4.88	37.80	42.68
Asthma	2.44	26.83	29.27
High blood pressure	0.00	28.05	28.05
Facial disfigurement	2.44	24.39	26.83
Missing or unsightly front teeth	2.44	21.95	24.39
Peptic ulcers	2.44	15.85	18.29
History of tuberculosis (non-infective)	4.88	12.20	17.07
Diabetes	1.25	13.75	15.00

Table 118. Responses of employers as to whether a female employee on Workman's Compensation would be fired.

	No	Yes
Would continue to employ	10 (12.0%)	73 (88.0%)
Depends on job	80 (96.4%)	3 (3.6%)
Depends on job availability	77 (92.8%)	6 (7.2%)
Depends on job record	77 (92.8%)	6 (7.2%)
Depends on disability	61 (73.5%)	22 (26.5%)
No special policy	82 (98.8%)	1 (1.2%)
Don't know	78 (94.0%)	5 (6.0%)

Table 119. Responses of employers as to whether a female employee on New York State Disability Insurance would be fired.

	No	Yes
Would continue to employ	18 (21.7%)	65 (78.3%)
Depends on job	81 (97.6%)	2 (2.4%)
Depends on job availability	76 (91.6%)	7 (8.4%)
Depends on job record	78 (94.0%)	5 (6.0%)
Depends on disability	66 (79.5%)	17 (20.5%)
No special policy	83(100.0%)	0 (0.0%)
Don't know	81 (97.6%)	2 (2.4%)

Table 120. Health services available to employees. (Multiple positive responses occurred.)

	No. of respondents	% of sample
None	1	1.2%
First aid cabinet	79	96.3
Room with couch	69	84.1
Medical office	35	42.7
Comprehensive health clinic	9	11.0
Employer is a medical facility	13	15.9
Other	7	8.5

Table 121. Health service personnel employed by the respondents to the employers' questionnaire.

	No. of respondents	% of sample
Full-time physician	12	14.5%
Part-time physician	25	30.1
Doctor on call	34	41.0
Registered or practical nurse	37	44.6
Nurse's aide	10	12.0
Personnel trained in first aid	18	21.7
Dentist	4	4.8
Other	16	19.3

Table 122. Do personnel dispense medications to employees?

	No. of respondents
Yes	51
Aspirin dispensed	43
Antiseptics dispensed	48
Prescriptions	14
Immunizations	11
Other medications	15

Table 123. Is a physical examination required before hiring an applicant? If so, who performs it?

	No. of respondents	% of sample
No	28	33.7%
Yes, if indicated by medical history	3	3.6
Yes, for certain jobs	10	12.0
Yes, for all jobs	42	50.6
	83	100.0%

	No. of respondents	% requiring exam
Private physician	16	29.6%
Plant physician	27	50.0
Plant physician and nurse	3	5.6
Private and/or plant physician	7	13.0
Other	1	1.9
	54	100.0%

Table 124. Do these health hazards exist in your business?

	No	Yes
Any	4 (4.8%)	79 (95.2%)
Skin irritants	20 (25.3%)	59 (74.7%)
Industrial noise	59 (74.7%)	20 (25.3%)
Gases, fumes, dust	47 (59.5%)	32 (40.5%)

physicians part-time and 34 said they had a physician on call. Thirty-seven respondents stated that a registered or practical nurse was employed, 10 said there was a nurse's aide, 18 mentioned that they had personnel trained in first aid, 4 said they employed a dentist, 16 explained that they had other health service personnel. It was found that in 51 businesses or work premises medications were dispensed by personnel, aspirin was given out in 43 places, antiseptics were given out in 48 places and in 14 businesses prescriptions were written for employees by medical personnel. Immunizations were given by health personnel in 11 places, and other medications were dispensed by such personnel in 15 establishments (Tables 120-122).

The need for pre-job physical examinations was unqualified by 42 respondents while 10 said that such examinations were only required for certain jobs and 3 stated that such a "physical" would only be required if so indicated by the health history. Among those who said that a pre-employment physical was required by their company or business, 50% said that these examinations were carried out by the plant physician and 29.6% stated that the examination would have to be conducted by a private physician (Table 123).

When asked about health hazards pertaining to the business, 79 respondents said that these existed, 59 described skin irritants, 20 mentioned industrial noise, and 32 talked of gases, fumes, or dust (Table 124).

Comments from respondents about employing women on welfare were recorded verbatim. Responses were variable but can be grouped under the following headings:

1) prejudice against hiring based on past experience;
2) prejudice against hiring based on hearsay evidence;
3) qualified acceptance of welfare employees, e.g. depends on individual;
4) commitment to hiring based on favorable past experience with welfare recipients; and
5) no views because no experience.

More of the employers and personnel officers were in favor of hiring welfare women than those who were against it.

RECOMMENDATIONS

1. Major attention should be given to the development of positive health attitudes among low-income women. Education in this area should be included in the ongoing programs of public health departments which could supply paramedical personnel to communities for this purpose. Innovative teaching methods aimed toward disease prevention should be developed by physicians, nutritionists and dentists who would be responsible for the training of outreach workers. Additional health information should be disseminated via mass media, including television programs and advertising.

2. Early and preventive medical and dental care should be made available through establishment of rural and urban clinics where income is no barrier to provision of services.

3. School and continuing community education should be updated to provide nutrition and health teaching relevant to optimal functioning in daily life. Such programs should be specifically available to adolescents and young adult women. Barriers to attendance such as low income, transportation difficulties and need for child care should be minimized by provision of free services.

*4. Exercise and diet programs should be developed at the local level to prevent obesity.

*5. Physical rehabilitation after childhood or adult illness, including surgery, should be made available not only at major medical centers, but also at community hospitals and regional clinics. Incentives to promote utilization of these rehabilitation centers should be provided such as free transportation and child care.

*6. Family planning clinics should be increased in number, particularly in rural and small town environments. A greater number of outreach workers should be provided who can disseminate information on the need for family planning and local services available to low income women as well as to those who have higher economic status.

7. Defined pregnancy leave should be offered and encouraged as an alternate to leaving school for girls who become pregnant before graduation. Regional schools or vocational training programs should be expanded to meet the needs of low income pregnant teenagers in addition to allowing them to remain in their own high schools.

*These recommended programs are further discussed in the section "Aims, Costs and Evaluation of Health Education and Physical Rehabilitation Programs".

8. Vocational rehabilitation and manpower training programs should be established in rural as well as urban centers and should be made more available to women with health related work disabilities. As far as possible physical and vocational rehabilitation should be undertaken in the same centers under the guidance of physicians, psychologists, social workers and work training personnel acting as a team. This would allow total evaluation of disability, including subjective work limitation, treatment, development of job skills, work placement and follow-up to occur as a sequential process appropriate to individual needs.

9. WIN program administrators should be made aware of the effects of negative health attitudes and physical disabilities on job performance by trainees. Job training should be preceded by health evaluation, other than perfunctory physical examinations, and should include work-related health education and counseling. Physical examinations should include chest x-rays, EKG, vision and hearing assessment and should be supplemented by hematologic and biochemical tests, especially in middle aged women. Health related work limitations should be precisely defined. Trainees should be advised of the need for corrrective measures to overcome such disabilities as visual and hearing defects, late effects of injury, obesity and its complications. Collaborative programs should be developed with clinics and rehabilitation centers who have personnel and facilities to undertake such rehabilitation.

10. Manpower training should include development of job skills such that women (or men) with health disabilities may be able to carry out skilled or semiskilled operations requiring less physical effort.

Aims, Costs and Evaluation of Health Education and Physical Rehabilitation Programs

Aims

To create positive health attitudes, to overcome specific disabilities, and to extend family planning so that more low-income, rural or urban women may be employed.

Outline of Programs and Their Cost Analysis

1. Each project is set forth with the target population it seeks to reach.

2. Programs include family planning, obesity control and correction of such disabilities as refractive errors.

3. Estimated budgets for recruitment of the target population, facilities, personnel, supplies and supporting cost are explained.

4. Costs are compared for separate health programs and combined physical and vocational rehabilitation.

Evaluation

1. Initial and periodic demographic and medical characteristics of the selected population will be reported indicating the extent to which the target population is reached. The minimal set of variables for which information is to be sought will include number, age, race, income, work status, occupation and result of physical examination.
2. Reduction in work barriers and increased employment will be measured.
3. The cost effectiveness of services will be assessed annually.
4. Problems will be defined as these pertain to the population, the establishment of programs and the outcome.

Model for Establishing Program Costs

Each program will require a similar basic structure and costs must be estimated in terms of operational and supportive services.

1. Operational costs
   - (a) Recruitment of eligible population to include remuneration, transportation and office expenses of clerk and outreach workers
   - (b) Medical services including physicians' fees
   - (c) Facilities
   - (d) Equipment and supplies
   - (e) Patient maintenance including correspondence, house calls and group sessions
2. Cost of supportive services
   - (a) Record management
   - (b) In-service training of personnel
   - (c) Health education of patients
   - (d) Liaison with other agencies and referral
   - (e) Transportation

A. Family Planning

Annual Operational Expenditures per Patient (New Cases)

Type of expense	Dollars
Recruitment	8.00
Patient maintenance	1.00
Medical expenditures*	15.00
Physical facilities	2.00
Total	$26.00

*If subjects are in receipt of Medicaid, fees for medical services will be covered. Supportive costs may increase total per patient expenditure to $50.00 per annum including transportation and extension of clerical and/or nurse-practitioner services at Family Planning Clinic. (See Correa, H., Parrish, V. W. and Beasley, J. D. A three year longitudinal evaluation of the costs of a family planning program. Amer. J. Public Health 62: 1647, 1972).

B. Weight Control

Annual Expenditures per Patient (new cases)

Type of expense	Dollars
Recruitment	8.00
Medical expenditures[1]	20.00
Exercise program[2]	25.00
Referral for diet instruction[3]	40.00
Health education[4]	2.00
Patient maintenance[5]	5.00
Total	$100.00

[1] Includes initial evaluation and EKG covered by Medicaid if patient is eligible.
[2] Costs based on annual membership fee at YMCA where exercise program is provided.
[3] Reflects cost of initial visit to Weight Watchers ($7.00, thereafter 11 visits at $3.00 per visit).
[4] Cost of instructional materials.
[5] Follow-up by outreach workers (e.g., nutrition aides).

This program envisages no permanent facility but initial recruitment by nutrition aides directed by a nutritionist in the Public Health Department. Transportation costs will increase total expenditures; these costs varying with population density and distribution. The most efficient means of providing transportation, e.g. car pool service or community bus, will vary with locality. It is anticipated that coverage of medical expenditures by Medicaid would be offset by transportation charges.

C. Physical Rehabilitation

Type of Expense	Dollars
Recruitment	8.00
Medical expenditures[1]	20.00
Corrective measures[2]	30.00 - 400.00
Total range	$58.00 - 428.00

[1] Medical expenditures reflect initial evaluation by a specialist.
[2] Corrective measures will include physiotherapy (12 treatments each of 1 hr. at $7.50), provision of glasses ($30.00), hearing aids ($175.00-$400.00), surgical procedures such as stripping of varicose veins ($160.00), or treatment of dermatologic complaints ($20.00); all covered by Medicaid.

All dollar figures pertaining to rehabilitation must be taken as approximates; actual costs will vary with state and local financing of health care delivery.

Number of Women Requiring Special Health Programs per Thousand Population
(based on present study)

Service required	No./1000 population
Family planning[1]	556
Weight control[2]	576
Glasses[3]	79
Hearing aid[4]	108
Physical therapy[5]	66
Surgery[6]	34

[1] Family planning needs are estimated on the basis of those women in our population who were physically capable of bearing children.

[2] Weight control requirements are based on the number of women defined as obese viz. triceps skinfold > 30 mm (606 per 1000), minus the 30 per 1000 with skinfold >50 mm and abnormal EKG findings. It was felt that the latter group was unlikely to benefit from the program.

[3] Need for glasses was estimated for those with uncorrected diminution in visual acuity.

[4] Hearing aids were estimated for those with hearing disabilities associated with normal bone conduction. It is possible that aural surgery would obviate the need for hearing aids in some women.

[5] Physical therapy is estimated on the basis of probable restoration of function in women with musculoskeletal disease and/or late effects of surgery or accidents.

[6] Surgery is indicated for those with disabling varicose veins, nodular goiter, abdominal hernia and cataracts (2/3 for varicose veins).

In estimating need for special health programs, numbers of women per 1000 population with non-restorable medical conditions have been excluded.

Comparison of Selective and Holistic Approach to Rehabilitation

While it is recommended that physical and vocational rehabilitation be carried out at special centers, the feasibility for early implementation of such a program is questioned both because new facilities would be required and because of high costs. An average per patient cost of $1,000.00 has been estimated from the time of registration in a physical/vocational rehabilitation center until return to gainful employment. (Robinson, H. M. Rehabilitation in Dermatology. Cutis 6: 973, 1970) As alternates, having potential for early success, selected programs have been described in which common problems detracting from employability would be treated. Innovative in these programs is the concept that local established organizations should be optimally utilized and that the major role of the WIN program would be to cover costs where they are not forthcoming from other sources as in the case of recruitment of the population in need.

SUMMARY

The aim of this study was to examine the health and nutritional status of low-income women in Upstate New York and to identify problems that interfere with their employment. Questionnaires on health and work, complete medical and employment histories, physical examination, laboratory tests, dental examination and diet recalls were obtained for 469 low-income women, mothers of at least one teen-age child. The major findings and recommendations are briefly summarized below.

The greater the total number of current medical complaints that the women reported, the less likely they were to be employed. Among these complaints neurasthenic symptoms including tiredness, insomnia, headaches and nervousness together were significantly more common among the non-working groups. Physical and mental disabilities, documented by examination, were also associated with unemployment. Most medical findings were of chronic ailments which could have been prevented. Included in this category were obesity and its complications, late effects of accidents, infections or nutritional deprivation, back syndromes, as well as chronic cardiovascular and respiratory disease.

Obesity was the most common nutritional problem encountered. Unemployment was related to obesity, and the incidence of unemployment rose directly with the degree of fatness. The association between unemployment and obesity could be explained as being due to the coexistence of diseases known to be complications of obesity, such as hypertensive heart disease and diabetes.

Variables correlated with current welfare status (welfare dependency) included absence of an employed husband, disabilities arising in early life and the presence of chronic disease.

The total number of years a woman had been employed since leaving school was related directly to education and job skills and inversely to the number of children and number of pregnancies. The more pregnancies a woman had, the greater the likelihood that she had dropped out of school early. Many of these women had very large families. Childbearing and rearing had prevented them from seeking, obtaining or holding jobs in the past, and their lack of previous work experience often prevented present employment. However, 90 percent of the sample said they had never received advice from a family planning service. That this was not due to preference for large families was indicated by the fact that over 30 percent of the sample had finally been rendered surgically incapable of childbearing by tubal ligation or hysterectomy, often at an early age.

The population was not homogeneous with respect to life style. Four subgroups were defined, a highly motivated group (working and off welfare), a neglected group (unemployed and on welfare), a traditional female group (unemployed, off welfare, but with an employed husband), and an unskilled group (working and on welfare). The most valid indicators of social mobility were found to be past work achievement, welfare independence, education and health. Indicators of chronic

poverty and welfare dependence included lack of schooling, lack of health care, lack of past jobs, lack of family planning and lack of a working husband. Self-neglect was primarily associated with welfare and unemployment or underemployment. Potential for leaving welfare, judging from the past experience in this group, was unrelated to current health problems other than those due to past neglect. Observed health problems were in many instances amenable to therapy; there were women in the employed groups who were medically handicapped. Women with job skills were less likely to consider that health problems limited the type of employment they could undertake.

It was not possible to ascertain the availability of medical and related services when our population was younger. Present facilities in the areas of the survey were limited with respect to clinics but otherwise fairly adequate. A large subgroup of our population had not availed themselves of preventive health facilities or care. A smaller group had apparently never been to the doctor even when sick. Cultural fear of doctors and dentists was found. Examination of Medicaid records showed that symptomatic care took undue precedence over preventive medicine and that prescription drugs were consumed excessively by the population.

Employers of our sample recognized certain health problems as occupational or insurance risks. They were therefore as reluctant to hire women with obesity, back problems, skin disease, or heart disease as they were to take on those with gross physical defects or alcoholism.

In addition to the marked prevalence of obesity, the effects of poor nutrition among these women were particularly shown by their short stature. Within the sample, shortness was strongly associated with lack of education, past unemployment and poor dental health.

Real medical disabilities and illnesses, documented by physical examination and other tests, were frequently associated with nervous symptoms (headache, tiredness, insomnia and nervousness) and complaints associated with poor physical condition (e.g., breathlessness). Counseling as well as physical rehabilitation would be necessary to return such workers to the job market.

Conclusions

The health situation of our sample population has been influenced by sociocultural factors. Included among these are isolation, poverty, medical neglect and malnutrition in early life, lack of education and a feeling of helplessness. Escape from these attitudes and conditions has only been possible for a small minority. Factors contributing significantly to independence and social mobility have been acquisition of job skills, family planning and health care.

The possibility of returning this population to full health is limited. However, intervention among similar groups at an earlier age should prove more successful. Where full physical rehabilitation is not possible, as in our sample, vocational training, counseling and health maintenance would permit employment of a larger proportion of the women. In this context the role of nutrition aides and paramedical personnel in educating women on health matters should be expanded and is feasible at low cost.

Appendix A

MEDICAL HISTORY

1 2 3 4 5 6 7 8 9 10 M1

Medical Section

11 1. When you were born, did you have any medical problems? 0 No Yes

If yes:

a. What was the problem? ________________________________

(Codes 1-8 will be codes for problems)

12 2. Did this condition result in any permanent disability?

0 no
1 poor sight
2 deafness
3 lameness
4 other ______________________________ (4-8 other)

Date of Birth______________________________

3. Did you have any serious illness, operation or injury before the age of 6? No Yes
(If no, code 0 in col. 13)
(If yes, ask the following):

	Problem 1		Problem 2	
A. What was the medical problem?		13 14		22 23
B. How old were you?	Age Code	15	Age	24
C. How long were you ill? 1 less than 3 mo. 2 3-6 mo. 3 7-12 mo. 4 more than 12 mo.	Code	16		25
D. Were you hospitalized at this time? 0 no yes If yes, how long?	If no, code	17		26
E. Were you under medical care at home? 0 no yes If yes, by whom?	If no, code	18		27
F. Did this illness require continued treatment? 0 no yes If yes, what type of treatment?	If no, code	19		28
G. Were you left with any permanent disability? 0 no yes If yes, describe	If no, code	20		29
H. Did the problem delay your starting school? 0 no 1 yes	Code	21		30

M3

	Problem 1	Problem 2
A. What was the medical problem?	31 32	40 41
B. How old were you?	Age Code 33	Age 42
C. How long were you ill? 1 less than 3 mo. 2 3-6 mo. 3 7-12 mo. 4 more than 12 mo.	Code 34	43
D. Were you hospitalized at this time? 0 no yes If yes, how long?	If no, code 35	44
E. Were you under medical care at home? 0 no yes If yes, by whom?	If no, code 36	45
F. Did this illness require continued treatment? 0 no yes If yes, what type of treatment?	If no, code 37	46
G. Were you left with any permanent disability? 0 no yes If yes, describe.	If no, code 38	47
H. Did the problem delay your starting school? 0 no 1 yes	Code 39	48

4. Illness in childhood and adolescence (6-____ yrs.). State age of leaving school.

5. Did you have any serious illnesses or injuries as a school child and/or adolescent?

0 no yes (If no, code 0 in col. 49)

If yes, ask the following:

	Problem 1	Problem 2
A. What was the medical problem?	49 50	60 61
B. How old were you?	Age Code 51 52	Age 62 63
C. How long were you ill? 1 less than 3 mo. 2 3-6 mo. 3 7-12 mo. 4 over 12 mo.	Code 53	64
D. Were you hospitalized at this time? 0 no Yes If yes, for how long?	If no, code 54	65
E. Were you under medical care at home? 0 no yes If yes, by whom?	If no, code 55	66
F. Did this illness or injury require continued medical treatment? 0 no yes If yes, describe.	If no, code 56	67
G. Were you left with any permanent disability? 0 no Yes If yes, describe.	If no, code 57	68
H. After your illness could you return to your regular school? 0 no yes If no, what type of special school did you attend?	If yes, code 58	69
I. After your illness or injury did you have an excuse from school sports? 0 no 1 1 yr or less 2 2 years 3 more than 2 yrs.	Code 59	70

M5

1 2 3 4 5 6 7 8 9 10

	Problem 3	Problem 4
A. What was the medical problem?		
B. How old were you?	11 12 Age Code 13 14	22 23 Age 24 25
C. How long were you ill? 1 less than 3 mo. 2 3-6 mo. 3 7-12 mo. 4 over 12 mo.	Code 15	26
D. Were you hospitalized at this time? 0 no yes If yes, for how long?	If no, code 16	27
E. Were you under medical care at home? 0 no yes If yes, by whom?	If no, code 17	28
F. Did this illness or injury require continued medical treatment? 0 no yes If yes, describe.	If no, code 18	29
G. Were you left with any permanent disability? 0 no yes If yes, describe.	If no, code 19	30
H. After your illness could you return to your regular school? 0 no yes If no, what type of special school did you attend?	If no, code 20	31
I. After your illness or injury did you have an excuse from school sports? 0 no yes 1 1 yr. or less 2 2 years 3 more than 2 yrs.	Code 21	32

MC

Card 2. 1 2 3 4 5 6 7 8 9 10

11

6. What was the reason for your leaving school?

1 I graduated
2 they needed me to help at home
3 I was sick
4 I got pregnant
5 I went to work
6 I was injured or ill
7 I got married
8 Other____

12 13

7. Have you had any serious illness or injury between the time you left school until this past year? no yes

If no, code 00 in Col. 14 and 15
If yes, ask the following:

	Problem 1	Problem 2
A. What was the medical problem?	14 15	27 28
B. How old were you?	Age 16 17	Age 29 30
C. How long were you ill? 1 less than 3 mo. 2 3-6 mo. 3 7-12 mo. 4 more than 12 mo.	Code 18	31
D. Were you hospitalized at this time? 0 no yes If yes, how long?	If no, code 19	32
E. Were you under medical care at home? 0 no yes If yes, by whom?	If no, code 20	33
F. Did this illness require continued treatment? 0 no yes If yes, what type of treatment?	If no, code 21	34

	Problem 1	Problem 2
G. If working at that time, how long were you out of work? 1 less than 1 mo. 2 less than 3 mo. 3 3-6 mo. 4 over 6 mo. 9 don't remember If never code 0	$\overline{22}$	$\overline{35}$
H. Were you left with any permanent disability? 0 no yes If yes, describe.	If no, code $\overline{23}$	$\overline{36}$
I. Was this covered by any type of medical insurance? 0 no yes If yes, describe.	Describe $\overline{24}$	$\overline{37}$
J. Did you have any rehabilitation after this problem (give examples)? 0 no yes Describe, & by whom?	$\overline{25}$ $\overline{26}$	$\overline{38}$ $\overline{39}$

	Problem 3	Problem 4
A. What was the medical problem?	$\overline{40}$ $\overline{41}$	$\overline{53}$ $\overline{54}$
B. How old were you?	Age $\overline{42}$ $\overline{43}$	Age $\overline{55}$ $\overline{56}$
C. How long were you ill? 1 less than 3 mo. 2 3-6 mo. 3 7-12 mo. 4 more than 12 mo.	Code $\overline{44}$	$\overline{57}$
D. Were you hospitalized at this time? 0 no Yes If yes, how long?	If no, code $\overline{45}$	$\overline{58}$
E. Were you under medical care at home? 0 no yes If yes, by whom?	If no, code $\overline{46}$	$\overline{59}$

	Problem 3	Problem 4
F. Did this illness require continued treatment? 0 no yes If yes, what type of treatment?	If no, code 47	60
G. If working at that time, how long were you out of work? 1 less than 1 mo. 2 less than 3 mo. 3 3-6 mo. 4 over 6 mo. 9 don't remember If never code 0	Code 48	61
H. Were you left with any permanent disability? 0 no yes If yes, describe.	If no, code 49	62
I. Was this covered by any type of medical insurance? 0 no yes If yes, describe	50	63
J. Did you have any rehabilitation after this problem? 0 no yes If yes, describe, & by whom?	51 52	64 65

M9

1 2 3 4 5 6 7 8 9 10

Pregnancies

11 8. How many pregnancies have you had?

12 13 9. Age at first pregnancy__________.

14 10. How many children do you have?______

15 11. How many miscarriages have you had?________

16 12. Have you had any children who were stillborn? 0 no If yes,
how many?______

17 13. Have you had any children who were abnormal at birth? 0 no
If yes, how many?________

18 What was the problem?____

19 Specify for each ___ _____________________ __________

20 14. During your last pregnancy, when did you first come under a doctor's care?
1 during the first 3 mo.
2 between the third and sixth mo.
3 between the sixth month and term
4 only for delivery
5 never

21 15. Was your youngest child bottle or breast fed?
1 bottle fed
breast fed
If breast fed, for how long?
2 attempted sh time
3 less than 6 mo.
4 6 12 mo.
5 more than 12 mo.

22 16. Did you take vitamin and/or mineral pills during your pregnancies?
Vitamins type____________________
0 never
some pregnancies: approximate #__________
23 1 all pregnancies
Minerals type____________________
0 never
some pregnancies; approximate #__________
1 all pregnancies

16A Did you take vitamin and/or mineral pills after you gave birth?
Vitamins type____________________
24 0 never
1 after some pregnancies; approximate "__________
25 2 after all pregnancies
Minerals type____________________
0 never
1 after some pregnancies; approximate "__________
2 after all pregnancies

17. Where were your children born? State the numbers born at each of the following places:
26 27 28 1 Hospital________ 2 Home__________ 3 Other__________

29 18. After the birth of your last child did you return to the doctor for a checkup?
0 no
1 yes

19. Did any medical problem during pregnancy or any disability resulting from pregnancy ever prevent you from getting a job? State the number of times:

30 a during pregnancy _____

31 b disability resulting from pregnancy _____

Present Health

27 20. Have you reached menopause?
0 no
If yes, at what age? ________
(If no, code 0; if yes but don't remember age, code 8.)

21. Could you say how much the following health problem bothers you? (Check appropriate column for each problem)

		0 Never	1 Before my period	2 Occasionally	3 Every day
28	headaches				
29	bachaches				
30	cramps				
31	nervousness				
32	faintness				
33	swollen ankles				
34	heartburn				
35	tiredness				

22. Have you had any operations, injuries or serious or frequent illnesses in the past year?
0 no
If yes, ask the questions on the following page:

A. Diagnosis	36 37	47 48
B. Length of disability or sickness: 1 less than 1 mo. 2 1-3 mo. 3 4-6 mo. 4 6 mo. or greater	Code 38	49
C. Were you hospitalized at this time? 0 no yes If yes, for how long?	If no, code 39	50
D. Were you under medical care at home? 0 no yes If yes, describe.	If no, code 40	51
E. Are you under medical care now for this problem? 0 no yes If yes, describe	If no, code 41	52
F. If working, how long were you out of work? 1 less than 1 mo. 2 less than 3 mo. 3 3-6 mo. 4 over 6 mo. 9 don't remember If never code 0	Code 42	53
G. Were you left with any permanent disability? 0 no yes If yes, describe.	Describe 43	54
H. Was this illness, accident, etc. covered by any type of medical insurance? 0 no yes If yes, describe.	Describe 44	55
I. Did you have any rehabilitation after this problem? 0 no yes If yes, describe and by whom.	45 46	56 57

Checklist:

Did you forget to tell me about any major illness, operation or injury during any period in your life concerning:

1 heart, lungs or other internal organs

2 nose, ears and throat

3 eyes

4 stomach and GI tract

5 arms and legs

6 skin

7 teeth

8 nervousness, mental problems

9 female problems.

If yes, fill in previous sections and note here:

Appendix B

MEDICAL CHECK-LIST AND PHYSICAL EXAMINATION

Current Symptoms (Circle answer)

			Yes no
Rash			Yes no
Hair loss			Yes no
Skin ulcers			Yes no
Allergies			Yes no
Weight gain			Yes no
Weight loss			Yes no
Flatulence or indigestion			Yes no
Stomach pain			Yes no
Diarrhea			Yes no
Constipation			Yes no
Cough	dry	with sputum	Yes no
Chest pain	on exertion	at rest	Yes no
Breathlessness			Yes no
Cramps in legs			Yes no
Palpitations			Yes no
Swollen ankles			Yes no
Frequent urination			Yes no
Urinary incontinence (inability to hold water)			Yes no
Urinary infection			Yes no
Menstrual irregularity			Yes no
Prolapse (dropped womb)			Yes no
Hot flashes			Yes no
Backache			Yes no
Flat feet			Yes no
Arthritis			Yes no
Insomnia			Yes no
Headache			Yes no
Paralysis			Yes no
Fits			Yes no
Loss of eyesight	R eye	L eye	Yes no
Deafness	R ear	L ear	Yes no

Other____

Pregnancy Yes no

DLMP____________ Date____________________

Bleeding gums________________________________ Yes n

Tender gums__________________________________ Yes n

Physical Exam

(Report Positive Findings - Site and Extent)

Skin

1. rash ______
2. cyanosis ______
3. hair loss ______
4. edema ______
5. other Varicose vein ______

Head and Neck

a) Mouth

6. lips ______
7. tongue ______
8. mucosa ______
9. other ______

Halitosis ______

b) Ears

10. outer ear ______
11. middle ear ______

______

12. other ______

c) Neck

13. goitre - Yes ___ No ___ . If yes, max. neck circumference ______

d) eyes ______

Chest

14. cough ______
15. breathlessness ______
16. deformity ______
17 heart ______
18. lungs ______

other ______________________________

Abdomen

20. hernia ______________________________

21. scars ______________________________

22. other ______________________________

Musculo-skeletal System

23. deformity ______________________________

24. loss of function ______________________________

25. prosthesis worn ______________________________

26. other ______________________________

Nervous System

27. tremor ______________________________

28. paralysis ______________________________

29. stammer ______________________________

30. aphasia ______________________________

These physical findings ______________________________

0 would not interfere with working

1 with rehabilitation, would not interfere with working

2 with rehabilitation, would limit the type of job. How? ______________________________

____

3 would limit the type of job. How? ______________________________

____

4 would limit employment to a sheltered workshop

5 would cosmetically interfere with obtaining employment

6 would prevent employment

7 not able to judge whether it would affect working because diagnostic test necessary.

Blood Pressure ___ ___ ___

___ ___ ___

Vital Capacity ___ ___ ___ ___ ___

Heart Rate ~~___ ___ ___~~

$\overline{1}$ $\overline{2}$ $\overline{3}$ $\overline{4}$ $\overline{5}$ $\overline{6}$ $\overline{7}$ $\overline{8}$ $\overline{9}$ $\overline{10}$

Anthropometry

1. Height ___ ___ ___ cm

2. Weight ___ ___ ___ kg

3. Skinfold thickness __________ mm

____

____

____

Vision and Hearing

1. Do you wear a hearing aid?

0 no

1 yes

2. Audiometry

0 normal

1 abnormal

level __________

3. Do you wear corrective lenses (glasses or contact lenses)?

0 no

1 only for reading

2 only for driving

3 sometimes

4 all the time

4. Vision: If wearing glasses, test with glasses. Check if tested with corrective lenses ______.

left eye _____

right eye _____

HEARING TESTS

	Right Ear		Left Ear	
Air Conduction	Contact	Cm. from ear	Contact	Cm. from ear
Bone Conduction	Mastoid		Mastoid	
Hearing Aid	Worn	Not worn	Worn	Not worn
Spoken Voice	Heard Not Heard			

Appendix C

Dental Examination

Tooth No.	Miss-ing	Replacement		Filled	Caries		Periodontal		Plaque		Calculus	
		Dent.	Bridge		Non-rest.	Rest.	Pocket (+4 mm.)	Mobility (+1 mm)	Mild	Sev.	Sup.	Sub.
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
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28												
29												
30												
31												
32												

1. DENTURES:

Subject is edentulous no__ Yes __ If yes, for how long?______________

Subject has and wears dentures _____ Have these ever been replaced ___ adjusted___

Subject has and does not wear _____ Why doesn't she wear?__________ ___

Assess denture status: serviceable_____ non-serviceable____
Adjustment required (describe)______________________________

2. Gingivitis: none____ mild gingivitis____ gingivitis ____

3. Occlusion: normal ____ abnormal ____

4. Comments:____
____

Appendix D

NUTRITION QUESTIONNAIRE

Card 6 I 2 3 4 5 6 7 8

24 hour recall: 1. Tell me everything you had to eat and drink yesterday from the moment you got up until this morning:

Time	Place	Food	Description	Amount

2. Was this a typical day?
   0 Yes
   1 No, I was sick
   Other ________________________________

Do not code
Card 7

1 2 3

4 5 6 7

8

9 10

Food frequency

How many servings per week do you eat of the following?

11 12

3. Meat (including poultry and fish) ________

4. What are the 3 most often? How many servings do you eat per week?

13 14 15 16
1 ________

17 18 19 20
2 ________

21 22 23 24
3 ________

25 26

5. Vegetables ____________

6. What veg. do you eat most often? How many servings of each do you eat per week?

27 28 29 30
1 ________

31 32 33 34
2 ________

35 36 37 38
3 ________

39 40

7. Fruit (all kinds - fresh or canned, etc.) ____________________

8. What fruits do you eat most often? How many servings of each do you eat per week?

41 42 43 44
1 ________

45 46 47 48
2 ________

49 50 51 52
3 ________

53 54

9. Potatoes ____________

55 56

10. Milk # glasses ____ or # ounces ____

57

11. What type of milk do you usually drink?

0 neither
1 fluid milk (whole or skim)
2 dry (powdered) skim milk
3 combination
9 I don't know

12. Cheese

58 59 # slices (i.e. American cheese) _______

# cups (i.e. cottage cheese) _______

60 61 13. Ice cream or milk deserts (1/2 cup = 1 serving) _______

62 63 14. Eggs ___________

64 65 15. Fruit juices, fruit drinks or ades - # cups _______

16. Which ones do you drink most often? How many cups per week of each?

66 67 68 69 1 _________

70 71 72 73 2 _________

74 75 76 77 3 _________

16a How many of the following do you drink per day?

78 1. water _______ glasses

79 2. tea _______ cups

80 3. coffee _______ cups

Card 8

1 2 3

4 5 6 7

8

9 10

17. How much of the following do you drink per week?

11 beer (# cans) _____

12 wine (# glasses) _____

13 liquor (# shots) _____

18. Candy

14 pieces - _____pieces/wk.

bars - _____bars/wk.

15 19. Are you on a diet or do you restrict what you eat for any reason?

0 No

If yes, (a) what kind of a diet?
1 wt. loss

2 high blood pressure
3 ulcer
4 diabetes
5 other ______________________________

(b) Who prescribed the diet?
16 1 I did
2 doctor (private)
3 doctor (clinic)
4 nurse
5 nutritionist or dietitian
6 magazine or newspaper
7 club such as TOPS or Weight Watchers
8 other ______________________

17 (c) How long have you been on this diet?
# months ________

18 20. How many times have you tried to lose weight by dietary means? (in the last 10 years)
0 never
1 once or twice
2 3-5 times
3 6-10 times
4 more than 10 times

21. Do you now take any vitamin pills, vitamin drinks, medicinal tonics or food supplements? No

If yes (a) multiple vitamin pill or drink
19 What kind ______________________________
How often do you take them?
20 1 less than 3x/wk.
2 3 or more x/wk.
3 1x/day
4 more than 1x/day
(b) single vitamin or mineral supplement
21 What kind ______________________________
How often?
1 less than 3x/wk.
22 2 2 or more x/wk.
3 1x/day
4 more than 1x/day
(c) if tonic
23 What kind ______________________________
How often?
1 less than 3x/wk.
24 2 3 or more x/wk.
3 1x/day
4 more than 1x/day
(d) If bone meal or wheat germ or other
25 What ______________________________
How often?
1 less than 3x/wk.
26 2 2 or more x/wk.
3 1x/day
4 more than 1x/day

22. What are the usual sources of your family's food (number in order of use) up to 3.

27 ___ a store purchase (money or food stamps)

28 ___ b food commodities

29 ___ c hunting and fishing

30 ___ d home produced

31 ___ e gifts from church, employers, etc.

32 ___ f other ______________________

If answer to #22 is c, d, e, or f ask question 23.

23. What foods do you produce? Is home production the major source of this food?

33	a meat	0 No	1 major source	2 minor source
34	b eggs	0	1	2
35	c milk	0	1	2
36	d fruit	0	1	2
37	e vegetables	0	1	2

24. Are you eligible for food stamps?

38
0 no
1 none in area
2 yes
9 I don't know

If answer to 24 is 2, ask question 25

---

25. Do you purchase the food stamps?

39
0 no
1 occasionally
2 regularly

If answer to 25 is 1 or 2, ask questions 26, 27, 28.

---

26. How much do you pay for your family's food stamps per month?

40 41 42 $__________

27. What is the value of the food stamps that you receive (per month)?

43 44 45 $__________

28. Date of last receiving food stamps ___/___/______

46

29. Are your children eligible for a free or reduced price lunch?

47
0 children not in elementary or secondary schools
1 no school lunch program available
2 not eligible
3 eligible
9 I don't know

If answer to #29 is 3, ask question 30.

30. Do they participate in the free or reduced price school lunch program?
3 no 9 I don't know
4 yes

48 If answer to #30 is 3, why don't they participate?
1 they are embarrassed to be identified as receiving lunch
2 can't afford reduced price lunch
3 I don't like "give-aways"
4 I like to pack lunches for my children
5 other ______
9 I don't know

49 32. Have you or your family ever in the past ten years been actually hungry because you did not have enough food?
0 never
1 1 or 2 times
2 occasionally
3 many times
9 I don't know

33. Have you had any help in nutrition or meal planning?
50 0 no
1 nutrition aides
2 homemaker aides
3 dietitians
4 nutritionists at clinic
5 4-H or extension service
6 other ______
9 I don't know

34. What foods and beverages should be included in the diet of a woman between the ages of 25 and 45? Why should they be included?

	Foods	Why Included	Check to see if these foods are included in her diet. If they are not included, ask why.
51 52 53 54			
55 56 57 58			
59 60 61 62			
63 64 65 66			
67 68 69 70			
71 72 73 74			
75 76 77 78			

35. Are there any foods you know you should include in your diet but
79 you cannot afford?
0 no
If yes, describe. ______

______

30

Appendix E

WORK RELATED HEALTH QUESTIONS

and

UTILIZATION OF MEDICAL SERVICES

I. Work History
II. Health and Work
III. Utilization

Card 3. I. Work History 1 2 3 4 5 6 7 8

A	B	C	D		E	F	G
Type of job & place of employment	Year starting 19 __ Year leaving 19	Did you have to take a physical exam before getting this job? 0 no 1 yes	Was(is) there a doctor or nurse at the place where you work(ed)? If yes, did you consult them when you were not feeling well? 1 not available 2 available - but never consulted 3 available and consulted		What was the reason you left this job? 00 haven't left 1 non-medical reason 2 medical-not work related 31 illness 32 pregnancy 3 medical-work induced 21 injured at work 22 dermatitis 23 fumes or dust disagrees with you 4 medical-work aggravated	If answer to E is 3 or 4: How easy was it for you to get another job? 1 I got a job immediately It took: 2 3 mo. or less 3 6 mo. 4 9 mo. 5 > 1 yr. 6 couldn't get another job. State why. 7 didn't try to get another job	If answer to or 4 (medica -work relate you given ar job in the s business or 1 no 2 yes 3 didn't war
			Doctor	Nurse			
9	19 _ _ 19 _ _ 10	11	12	13	Describe &Code 14 15	16	
19	19 _ _ 19 _ _ 20	21	22	23	24 25	26	
29	19 _ _ 19 _ _ 30	31	32	33	34 35		
39	19 _ _ 19 _ _ 40	41	42	43			

1 2 3 4 5 6 7 8

C	D		E	F	G	H
Did you have to take a physical exam before getting this job? 0 no 1 yes	Was(is) there a doctor or nurse at the place where you work(ed)? If yes, did you consult them when you were not feeling well? 1 not available 2 available - but never consulted 3 available and consulted		What was the reason you left this job? 00 haven't left 1 non-medical reason 2 medical-not work related 31 illness 32 pregnancy 3 medical-work induced 21 injured at work 22 dermatitis 23 fumes or dust disagrees with you 4 medical-work aggravated	If answer to E is 3 or 4: How easy was it for you to get another job? 1 I got a job immediately It took: 2 3 mo. or less 3 6 mo. 4 9 mo. 5 > 1 yr. 6 couldn't get another job. State why. 7 didn't try to get another job	If answer to E is 3 or 4 (medical reason -work related) were you given another job in the same business or factory? 1 no 2 yes 3 didn't want one	If answer to E is 2, 3 or 4, who made the decision that you leave the job? 1 I did 2 my doctor 3 factory/ business dr. 4 my employer 5 other
	Doctor	Nurse				
11	12	13	Describe &Code 14 15	16	17	18
21	22	23	24 25	26	27	28
31	32	33	34 35	36	37	38
41	42	43	44 45	46	47	43

A	B	C	D		E	F	
Type of job & place of employment	Year starting 19 _ _ Year leaving 19	Did you have to take a physical exam before getting this job? 0 no 1 yes	Was (is) there a doctor or nurse at the place where you work(ed)? If yes, did you consult them when you were not feeling well? 1 not available 2 available - but never consulted 3 available and consulted		What was the reason you left this job? 00 haven't left 1 non-medical reason 2 medical-not work related 31 illness 32 pregnancy 3 medical-work induced 21 injured at work 22 dermatitis 23 fumes or dust disagrees with you 4 medical-work aggravated	If answer to E is [illegible] or 4. How easy was it for you to get another job? 1 I got a job immediately It took: 2 3 mo. or less 3 6 mo. 4 9 mo. 5 > 1 yr. 6 couldn't get another job. State why. 7 didn't try to get another job	If answer or 4 (med -work rel you given job in th business 1 no 2 yes 3 didn't
			Doctor	Nurse			
29	19 _ _ 19 _ _ 30	31	32	33	34 35	36	
39	19 _ _ 19 _ _ 40	41	42	43	44 45	45	
49	19 _ _ 19 _ _ 50	51	52	53	54 55	56	

209

C	D		E	F	G	H
Did you have to take a physical exam before getting this job? 0 no 1 yes	Was (is) there a doctor or nurse at the place where you work(ed)? If yes, did you consult them when you were not feeling well? 1 not available 2 available - but never consulted 3 available and consulted		What was the reason you left this job? 00 haven't left 1 non-medical reason 2 medical-not work related 31 illness 32 pregnancy 3 medical-work induced 21 injured at work 22 dermatitis 23 fumes or dust disagrees with you 4 medical-work aggravated	If answer to E is 3 or 4. How easy was it for you to get another job? 1 I got a job immediately It took: 2 3 mo. or less 3 6 mo. 4 9 mo. 5 > 1 yr. 6 couldn't get another job. State why. 7 didn't try to get another job	If answer to E is 3 or 4 (medical reason -work related) were you given another job in the same business or factory? 1 no 2 yes 3 didn't want one	If answer to E is 2, 3 or 4, who made the decision that you leave the job? 1 I did 2 my doctor 3 factory/ business dr. 4 my employer 5 other
	Doctor	Nurse				
31	32	33	34 35	36	37	38
41	42	43	44 45	45	47	48
51	52	53	54 55	56	57	58

A	B	C	D		E	F	
Type of job & place of employment	Year starting 19 _ _ Year leaving 19	Did you have to take a physical exam before getting this job? 0 no 1 yes	Was(is) there a doctor or nurse at the place where you work(ed)? If yes, did you consult them when you were not feeling well? 1 not available 2 available - but never consulted 3 available and consulted		What was the reason you left this job? 00 haven't left 1 non-medical reason 2 medical-not work related 31 illness 32 pregnancy 3 medical-work induced 21 injured at work 22 dermatitis 23 fumes or dust disagrees with you 4 medical-work aggravated	If answer to E is 3 or 4; How easy was it for you to get another job? 1 I got a job immediately It took: 2 3 mo. or less 3 6 mo. 4 9 mo. 5 > 1 yr. 6 couldn't get another job. State why. 7 didn't try to get another job	If ans or 4 (-work you gi job in busine 1 no 2 yes 3 didn
			Doctor	Nurse			
49	19 _ _ 19 _ _ 50	51	52	53	54 55	56	
59	19 _ _ 19 _ _ 60	61	62	63	64 65	66	
9	19 _ _ 19 _ _ 10	11	12	13	14 15	16	
19	19 _ _ 19 _ _ 20	21	22	23	24 25		

C	D		E	F	G	H
Did you have to take a physical exam before getting this job? 0 no 1 yes	Was(is) there a doctor or nurse at the place where you work(ed)? If yes, did you consult them when you were not feeling well? 1 not available 2 available - but never consulted 3 available and consulted		What was the reason you left this job? 00 haven't left 1 non-medical reason 2 medical-not work related 31 illness 32 pregnancy 3 medical-work induced 21 injured at work 22 dermatitis 23 fumes or dust disagrees with you 4 medical-work aggravated	If answer to E is 3 or 4; How easy was it for you to get another job? 1 I got a job immediately It took: 2 3 mo. or less 3 6 mo. 4 9 mo. 5 > 1 yr. 6 couldn't get another job. State why. 7 didn't try to get another job	If answer to E is 3 or 4 (medical reason -work related) were you given another job in the same business or factory? 1 no 2 yes 3 didn't want one	If answer to E is 2, 3 or 4, who made the decision that you leave the job? 1 I did 2 my doctor 3 factory/ business dr. 4 my employer 5 other
	Doctor	Nurse				
51	52	53	54 55	56	57	58
61	62	63	64 65	66	67	68
11	12	13	14 15	16	17	18
21	22	23	24 25	26	27	28

II. Health and Work

1 2 3 4 5 6 7 8 9 10

11 2. Are you at present
1 married
2 widowed
3 separated
4 divorced
5 single

If answer to #2 is 1, ask:

12 3. Is your husband working? 0 yes 1 sometimes 2 no

If answer to #3 is 1 or 2, ask:

13 4. What was wrong? Is there a medical reason why he doesn't work?
0 no
1 medical discharge from the armed services
2 got sick or hurt at work: describe ____________________
3 never has been able to work. Why? ____________________
4 other ____________________

5. Do you have any medical or dental problem that interferes with your getting or holding a job? no yes

6. Has your health (medical or dental) ever prevented you from seeking employment?
0 no
yes

If yes, ask:

A. What was the problem?	14 15	20 21
B. When did this problem start?	16	22
C. Does it still prevent you from working? 0 no yes If no, when did it stop interfering with your ability to work?	17	23
D. Have you had any rehabilitation or retraining because of this? If yes, what type of rehabilitation? Who ran the program?	18 19	24 25

7. Has sickness of a family member ever prevented you from seeking a job? 0 no yes If yes:

A. Relationship	B Reason	C Year starting	D- Is this still a problem? If not when did the problem end?
1 husband 2 child 3 other relative			
26	27	28	29
30	31	32	33

8. Have you ever received Workman's Compensation or any other type of disability insurance? 0 no yes If yes, ask:

A. What type of insurance?	34	42
B. What was the reason?	35 36	43 44
C. When did you start receiving it?	37	45
D. Are you still receiving payments? 1 yes	38	46
If no, when did you stop receiving payments?	39	47
Why did you stop receiving payments?	40	48
E. Has the fact that you are receiving Workman's Comp. (etc.) ever prevented you from getting a job? 0 no 1 yes	41	49

50 9. Did you ever fail a physical exam given for a job?

0 no yes

If yes, what was the reason? ______________________________

____

10. Has your health restricted the type of job you could get?
0 no yes

If yes, could you tell me the reasons why your health has limited your employment?
(Indicate whether one or more of the following statements apply.)

51 A I cannot do a standing job because of my bad back 0 no 1 yes

52 B I cannot do a standing job because of my bad legs
0 no 1 yes

53 C I don't have good enough eye sight. 0 no 1 yes

54 D I am hard of hearing. 0 no 1 yes

55 E They won't hire people with skin complaints. 0 no 1 yes

56 F I get nervous when I am working. 0 no 1 yes

57 G I am lame or crippled. 0 no 1 yes

58 H My doctor told me not to take a job. 0 no 1 yes
Why? ______________________________

59 I I am receiving disability insurance. 0 no 1 yes

60 J Other ______________________________

____

61 11. A Have you ever been eligible for a rehabilitation or retraining program?
0 I have never had a medical problem that caused me to need such services (go to question 12)
1 I have had the need for such programs but I was not eligible (go to question B)
2 I was/am eligible for rehabilitation and/or retraining programs? (go to question C)
3 other

If question A was 1, ask:

62 B Were you ineligible for the programs because no one would
refer you to such a service? 0 no 1 yes (go to question 12)

If answer to question A was 2, ask:

C Did you participate in the program? 0 no 1 yes
63 1 no (go to question D)
2 yes(go to question a,b)

If answer to question C was 1, ask:

D Why didn't you participate in the program?

64 1 I was kept waiting a long time
2 I lived too far away
3 I had no one to take care of my children
4 I didn't want to participate
5 other ______________________________
(go to question 12)

If answer to question C was 2, ask:

a) Did you participate in a rehabilitation program?
65 0 no 1 yes
If yes, what was the purpose of this program?

1 to train me to walk again
66 2 to give me physical therapy
3 to help me manage my home
4 other ______________________________

Who ran the program?
67 1 hospital
2 clinic
3 private doctor
4 other ______________________________

b) Did you participate in a retraining program? 0 no 1 yes
68 If yes, what was the purpose of the program?

1 to teach me a new job
69 2 to find out what kind of a job I could do

Who ran the program?
70 1 State Vocational Rehabilitation Program
2 hospital name ____________________
3 clinic name ____________________
4 other ______________________________

What was the outcome?
71 1 I dropped out of the program. Reason ____________
____
2 This did not help me get a job
3 I was then able to get a job.

12. Have you ever worked at a Sheltered Workshop?
72 0 no 1 yes

If yes:

73 A When did you get the job? 19 _ _

74 B Are you still working there? 1 no 2 yes

75 C If no, when did you stop working there? 19 _ _

76 D Where was the Workshop?____________________________

77 E Who directed the program?____________________________

78 F Why did you work there?____________________________

____

If working, ask questions 13, 14, 15 & 16 1 2 3 4 5 6 7 8 9 10

13. Have you been away from work more than one week this past year for health reasons?
0 no 1 yes

11 If yes, how many times?__________

12 What was the problem the last time you were absent for more than one week?____________________________

____

14. Have you been late for work for any reason in the last month?
1 doesn't apply
2 no
yes

13 If yes, how many times? ________

14 Why were you late the last time?____________________________

____

15. How many times in the past year did you consult the business/factory doctor or nurse? ______ 15

If answer is one or more, ask, for the 2 most recent cases:

	Reason for consultation	Outcome 1 treated at work 2 referred to other doctor, clinic, etc. 3 not treated 4 other ______
16 17		
18 19		

16. Are you given time off with or without pay for the following reasons?

		1 no time off or fired	2 vacation time off	3 time off no pay	4 time off with pay	5 don't know
20	personal illness					
21	family illness					
22	pregnancy					
23	post pregnancy					
24	to go to doctor					
25	to go to dentist					

17. Does your health at the present time interfere with doing your own house work?
0 no   yes

If yes:

26 What is the problem? ______

27 When did it start? 19 __

18. Some employers think that fat women are physically
28 unattractive. Do you agree?
1 no
2 yes
9 I don't know

19. Do you think that it is more difficult for overweight women to
29 get or hold a job?
1 no
2 yes
9 I don't know

20. If you were overweight would you take serious steps to reduce
30 your weight?
1 no
2 yes
9 I don't know
Other ____________________

21. Which of these statements are true and which are false?

31 Fat or obese women:
32 [✓ F] T a have an increased chance of getting cancer
33 F [✓ T] b have an increased chance of getting a heart attack
34 F [✓ T] c have an increased chance of dying young
35 [✓ F] T d have fewer mental problems
F [✓ T] e have an increased chance of getting diabetes

22. Do you think your present weight is:
36 1 too low
2 about right
3 a little too high
rather too high
much too high
other ____________________

23. Do you think an injection is:
1 not painful
37 2 slightly painful
3 very painful

24. How would you cope with the following?

A menstrual cramps
38 39 if working
1 I continue working
2 I rest for a little while
3 I stay home
4 I stay home and call the doctor
5 other ____________________

if not working
1 I continue with what I am doing
2 I rest for a little while
3 I stay in bed all day
4 I stay in bed and call the doctor
5 other ____________________

B cold
40 41 if working
1 I continue working
2 I rest for a little while
3 I stay home
4 I stay home and call the doctor
5 other ____________________

if not working
1 I continue with what I am doing
2 I rest for a little while
3 I stay in bed all day
4 I stay in bed and call the doctor
5 other ____________________

C sore throat with fever
if working
42 43 1 I continue to work
2 I rest for a little while
3 I stay home
4 I stay home and call the doctor
5 other ____________________

if not working
1 I continue with what I am doing
2 I rest for a little while
3 I stay in bed all day
4 I stay in bed and call the doctor

D lack of sleep
if working
44 45 1 I continue working
2 I rest for a little while
3 I stay home
4 I stay home and call the doctor
5 other ____________________

if not working
1 I continue with what I am doing
2 I rest for a little while
3 I stay in bed all day
4 I stay in bed and call the doctor
5 other ____________________

25. Do you have any type of medical insurance? (if 1 type of insurance, i.e. Medicaid, then = 1 = 0. If Blue Cross - Blue Shield-Group 6 =4 6 =6). 46 47

00 no
1 medicaid
2 private insurance
3 union insurance
4 Blue Cross--Group
5 Blue Cross-- Private
6 Blue Shield--Group
7 Blue Shield-- Private
other ____________________

26. Do you find medical forms very difficult to fill out?
0 no
1 sometimes
48 2 always
(If 1 or 2, give examples) ____________________

Why ____________________
3 other

Ask if not getting Medicaid

27. Have you ever applied for Medicaid? 1 no 2 yes

49 If not, why not?
1 not eligible
2 have another type of medical insurance
3 don't want or need it
4 don't know where to apply
5 don't know what it is
6 too many forms to fill out or forms too complicated to complete
7 never thought about it
8 other____________________

If yes, why don't you receive Medicaid?
1 not eligible
2 couldn't fill out forms or finish filling out forms
50 3 forgot to refile
4 other____________________

III. Utilization

1 2 3 4 5 6 7 8 9 10

Preventive Medical and Dental Care in Early Life

11 1. As a child and teenager did you have medical checkups other than at school?
0 never
occasionally (approximately how often? ________________)
4 each year

12 2. Did you have physical examinations at school?
0 never
occasionally
2 every 2 to 3 years
3 every year

13 3. During your childhood and adolescence did you have regular dental checkups?
0 never
occasionally (Approximately how often?________________)
4 every year

14 4. Did you have dental examinations at school?
0 never
occasionally (approximately how often?________________)
2 every 2 to 3 years
3 every year

Utilization of Medical Services

5. Are there any medical or dental clinics available in the area in which you live?
0 no   yes
15 If yes, what are the names of the clinics that you know about?

16 ____
17 ____
18 ____
19 ____
20 ____
21 ____

6. Do you have a regular family doctor?
22 1 no
2 yes
23 24 If yes, what is the doctor's name? ____________________

7. Would you be as willing to obtain medical services from the following as you would a family doctor?

25 a a hospital clinic 1 no; 2 sometimes; 3 yes; 9 don't know

26 b public health nurse 1 no; 2 sometimes; 3 yes; 9 don't know

27 c a local mobile clinic 1 no; 2 sometimes; 3 yes; 9 don't know

28 d a doctor's assistant 1 no; 2 sometimes; 3 yes; 9 don't know

Utilization of Preventive Care Services (in the last ten years)

29 8. If you are not feeling sick, do you go to the doctor for medical checkups?
0 never
occasionally (approximately how often? ____________________)
4 every year

30 9. If you do not have a serious or painful dental problem, do you go to the dentist for dental checkups?
0 never
occasionally (Approximately how often? ____________________)
4 every year

31 10. If you do not have a female problem, do you go to the doctor for vaginal examinations?
0 never
1 occasionally (approximately how often?____________________)
4 every year

32 11. Have you had a routine x-ray examination of your chest?
0 never   If yes:
1 more than 5 years ago
2 within the last 5 years
3 in the last year

33 12. Have you had your urine checked for sugar?
0 no   1 yes   a [illegible] for sugar
If yes, when was the last time?
1 more than 5 years ago
2 within 5 years
3 within the last year

34 13. Have you obtained advice from the Family Planning Service?
0 never
1 no, but I received advice from a medical doctor
2 during the past 5 years
3 during the last year

35 14. Have you had your sight checked, other than for a driver's license?
0 never
1 more than 5 years ago
2 within the last 5 years
3 within the last year

Who was the last person to test your eyes?

36

37 15. Have you had your hearing checked?
0 never
1 more than 5 years ago
2 within the last 5 years
3 within the last year

Who was the last person to check your hearing?____________________

38

Conditions For Seeing A Doctor

39 16. When you are sick (for example if you had a high temperature) how soon do you see a doctor?
1 right away
2 after I have waited a while
3 I put it off as long as possible
4 I never go to the doctor unless for an emergency
5 other______________________________________

40 17. When you are sick, where do you usually consult or see the doctor?

1 at his office
2 at the Emergency Room of the Hospital
3 at the clinic
4 at the health center
5 he comes to my home
6 over phone
7 I don't see the doctor
8 other______________________________

41 18. When you are sick, how do you get in touch with the doctor?

1 I telephone him (from my home)
2 I use a neighbor's phone because I don't have one myself
3 I don't have a doctor so I go to the clinic or Emergency Room at the Hospital
4 other______________________________

42 19. How do you get to the doctor or clinic?

1 walk
2 own car
3 other people's car
4 bus
5 train
6 other______________________________

20. Utilization of Medical Services in the Past Year

Title	Name and Address	Medical Coverage	# times seen in past year
Medical G.P.			
Specialists 1. 2. 3.			
Chiropractor			
Faith Healers			
Emergency Clinic			
Hospital (at least one night)			
Other clinics			
Dental Office visit			
Dental clinic			
Hospital for extractions			

Reason for not seeing the doctor

Ask as follows, if answer to question 8 is 0 or answer to question 16 is 2, 3, 4

21. Why do you delay going to the doctor? (answer all that apply)

43 I'm afraid the doctor might hurt me 0 no 1 yes

44 I'm anxious because he might find something seriously wrong
0 no 1 yes

45 I get embarrassed by physical examinations 0 no 1 yes

46 I think doctors are prejudiced against people who are on
welfare 0 no 1 yes
(or substitute people on Medicaid) 0 no 1 yes

47 For religious reasons 0 no 1 yes

48 I think I can take care of things myself 0 no 1 yes

49 It is very difficult to leave the children 0 no 1 yes

50 I don't have the use of a car 0 no 1 yes

51 There is no public transportation 0 no 1 yes

52 I can't get a doctor 0 no 1 yes

53 I can't afford it 0 no 1 yes

54 other ____________________

Refusal of Services (in the past year)

55 22. Has a doctor ever refused to treat you? 0 no 1 yes
If yes, why?
1 you live too far away
2 he was too busy
3 you are/were getting public assistance
4 you missed an appointment
5 racial discrimination
6 other ____________________
9 don't know

23. Has a dentist ever refused to examine your teeth?
56 0 no 1 yes If yes, why?
1 you live too far away
2 he was too busy
3 you are/were getting public assistance
4 you missed an appointment
5 racial discrimination
6 Other ____________________
9 don't know

24. Has a doctor ever refused to make a house call to your home?
57 0 no
If yes, how often (in the past year)?
58 1 2 3 4 5 6

Why? ____________________

____

25. Do you have a problem getting to the doctor's office or medical
59 clinic because of the hours when they are open?
0 no
1 yes, they are only open when I am working
2 yes, but for other reasons ____________________

____

26. If women has been to medical clinic:
60 Do you need an appointment to go to the ____________________
clinic? no yes
If yes, how long in advance do you have to make an appointment?
1 1 week or less
2 2 weeks
3 3-4 weeks
4 over 4 weeks
5 other ____________________

27. How long do you usually have to wait at the clinic?
61 1 I don't have to wait, i.e., less than 15 min.
2 1/4 to 1/2 hour
3 up to 1 hour
4 up to 2 hours
5 over 2 hours
6 other ____________________

Reason For Not Seeing the Dentist

28. Do you delay going to a dentist? 0 no 1 yes
If yes, ask: Why do you delay going to the dentist?
62 1 there are no dentists around here who accept Medicaid patients

63 2 it is too expensive

64 3 I am afraid he might want to take my teeth out

65 4 I am waiting till it seems really necessary

66 5 I can't leave the children

67 6 I have transportation difficulties

68 7 I am really afraid of going to the dentist

69 8 other ____________________

$\overline{70}$

29. Do you have problems getting to the dentist's office or to the dental clinic because of the hours when they are open?
0 no
1 yes, they are only open when I am working
2 yes, but for other reasons

$\overline{71}$

30. If woman has been to dentist or dental clinic:
How long was it from the time you made the appointment until you saw the dentist for that appointment?
    1 same week
    2 2 weeks
    3 3-4 weeks
    4 over 4 weeks
    5 other ______________________________

$\overline{72}$

31. How long do you usually have to wait at the dentist's office before your appointment?
1 don't have to wait (i.e. less than 15 min.)
2 1/4 - 1/2 hour
3 up to 1 hour
4 up to 2 hours
    5 over 2 hours

Appendix F

INDUSTRIAL QUESTIONNAIRE

Industrial Questionnaire

Section A

1. Name of Concern ______________________

Address (include county) ______________________

____

Telephone # ______________

	Changes
Date of Interview ______________	________
Time of Day ______________	________
	Position
Name of Person Interviewed ______________	________
Additional Person(s) Interviewed ______________	________
______________	________

Comments ______________________

____

____

2. Principal product of service of Industry ______________

3. Type of Industry (circle appropriate # or describe on lines below)

01. Agriculture
02. Mining
03. Construction
04. Manufacturing
05. Transportation Comm. & Public Util.
06. Wholesale & Retail Trade (include restaurant)
07. Finance, Insurance, Real Estate

08. Business & Repair Service

09. Personal Services

10. Entertainment & Recreational Services

11. Professional & Related Services

12. Public Administration

____

____

4. Total # employees full time male _______ full time female _______

__________ part time male _______ part time female _______

Source of Information total male _______ total female _______

____

5. Classification of Employees (Dec. 1971)

(Fill in appropriate categories. If this is not possible describe the occupations and give # in that class)

	Source of information __________ Total	source of information __________ Female
01. Professional		
02. Managers & Administrators		
03. Salesworkers		
04. Clerical		
05. Craftsman		
06. Operatives		
07. Transport Equipment Oper.		
08. Laborers		
09. Farm & Farm Management		

	Total	Female
10. Farm Laborer		
11. Service Workers		
12. Private Household Service Workers		

6. How many women have you employed from Manpower Training Programs during 1971?

1) None   Source of Information

2) Number ________   ____________________

3) Don't know

7. How many women have you employed from sheltered workshop during 1971?

1) None   Source of Information

2) Number ________   ____________________

3) Don't know

Section B

8. How many of these conditions would you consider as grounds for a) not employing an applicant or

b) terminating an employee

(Check appropriate Category)

	Non-employment					Termination					
	N	Y	D J	DS	DK	N	Y	DJ	DS	DK	DJR
A. Blindness - both eyes											
B. Blindness - one eye											
C. Deafness - unable to talk											
D. Deafness - able to talk											
E. Speech impairment											
F. Loss or loss of function of:											
1) 1 arm or hand											
2) both arms											
3) 1 leg											
4) both legs											
G. History of mental illness											
H. History of alcoholism											
I. Mild mental retardation											

	Non-employment					Termination					
	N	Y	DJ	DS	DK	N	Y	DJ	DS	DK	DJR
J. Asthma											
K. Diabetes											
L. Epilepsy											
M. History of heart disease											
N. High blood pressure											
O. History of Tuberculosis (non infective)											
P. Peptic ulcers											
Q. Chronic bronchitis and emphysema											
R. Back problems											
S. Dermatitis or other skin disease											
T. Missing or unsightly front teeth											
U. Facial disfigurement											
V. Obesity If yes, range acceptable ________											

9. A) What is your policy with respect to terminating the employment of women who are receiving Workman's Compensation?

1) continue employment
2) terminate employment
3) depends on job
4) depends on job availability
5) depends on job record
6) depends on disability
7) no special policy
8) don't know

B) What is your policy with respect to terminating employment of women who are receiving New York State Disability Insurance?

1) continue employment
2) terminate employment
3) depends on job
4) depends on job availability
5) depends on job record
6) depends on disability
7) no special policy
8) don't know

10. How many employees received Workman's Compensation from you in 1971?

A. Accidents ______________________________

B. Work induced or work aggravated _____________

C. Don't know

11. How many employees received State Disability Insurance while employed by you in 1971? _____________

don't know

12. Which of the following health services are available to your employees?

A) First aid cabinet	1) no	2) yes
B) Room with a couch	1) no	2) yes
C) Medical office	1) no	2) yes
D) Comprehensive health clinic	1) no	2) yes
E) Other	1) no	2) yes
F) None	1) no	2) yes

13. What kind of health service personnel do you employ?

A. Full-time physicians	1) no	2) yes
B. Part-time physicians	1) no	2) yes
C. Physician on call	1) no	2) yes
D. Nurse (SRN)	1) no	2) yes
E. Nurse (pract)	1) no	2) yes
F. Nurse's aide	1) no	2) yes
G. Other paramedical personnel	1) no	2) yes If yes, specify ________
H. Dentist	1) no	2) yes

I. Other (specify) __________________________________

J. None (skip to question 15)

14. (Ask only if health service personnel are available)

What medications are dispensed by your health service personnel?

a) Aspirin or aspirin compounds	1) no	2) yes
b) Local applications such as antiseptics	1) no	2) yes
c) Prescription drugs brought in by employee	1) no	2) yes
d) Other medication, specify	1) no	2) yes

____

____

15. Do you require a pre-employment health examination?

1) Yes, for certain jobs (answer question 16)

Specify types of jobs ______________________________

2) Yes, if indication in health history (answer question 16)

3) Yes, for all jobs (answer question 16)

4) No (skip to question 17)

16. If pre-employment health examinations are required, by whom are these performed?

1) private physician

2) plant physician

3) Other (specify)

SECTION D

17. What types of health hazards are encountered in your business?

A. Skin irritants 1) no 2) yes, specify ____________

B. Industrial noise 1) no 2) yes, specify ____________

C. Gases,fumes or irritant dusts 1) no 2) yes, specify ____________

D. Internal poisons 1) no 2) yes, specify ____________

E. Machinery accidents 1) no 2) yes, specify ____________

F. Accidental falls 1) no 2) yes, specify ____________

G. Accidents due to movement of heavy objects 1) no 2) yes, specify ____________

H. Explosions 1) no 2) yes ,specify ____________

I. Eye injuries 1) no 2) yes, specify ____________

J. Burns and cuts 1) no 2) yes, specify ____________

K. Others specific to your industry 1) no 2) yes, specify ____________

L. None 1) no 2) yes

18. Who instructs your employees on safety measures?

1. Safety officer
2. Manager or owner
3. Foreman
4. Plant physician
5. Plant nurse
6. Other (specify)
7. Written instructions
8. No instruction offered.

19. Which of the following personal protective measures are needed to limit industrial hazards?

A. Safety goggles	1) not used 2) optional use 3) compulsory use	Provided by company? 1) no 2) yes
B. Protective clothing	1) not used 2) optional use 3) compulsory use	Provided by company? 1) no 2) yes
C. Barrier creams	1) not used 2) optional use 3) compulsory use	Provided by company? 1) no 2) yes

20. Are there periodic health examinations required?

1) no

2) depends on job, specify ____________________ how often ________________

3) yes, if yes, how often ____________________

21. If an employee complained of a severe pain in her chest, do you have a specified procedure which would be followed?

Order

_____ A. She is sent home

_____ B. She is referred to health department

_____ C. Ambulance or car service is available to outside doctor.

_____ D Allowed to rest a while on couch

_____ E. Allowed to continue working

_____ F. No special provision made

22. If an employee incurs a severe arm laceration while at work, do you have a specified procedure which would be followed?

Order

_____ A. She is sent home

_____ B. She is referred to health department

_____ C. Ambulance or car service is available to outside doctor

_____ D. Allowed to rest a while on couch

_____ E. Allowed to continue working

23. If an employee complains of a sore throat, do you have a specified procedure which would be followed?

Order

_____ A. She is sent home

_____ B. She is referred to health department

_____ C. Ambulance or car service is available to outside doctor.

_____ D. Allowed to rest a while on couch

_____ E. Allowed to continue working

_____ F. No special provision made

24. If an employee loses her ability to perform a specific job due to a labor accident or sickness, what is the procedure taken?

1. She is transferred to another department within the plant.

2. She is laid off.

3. She is transferred to another department under certain circumstances,

   specify, DJ DJA DJR DD

4. Other

SECTION F

25. What are your policies with regard to pregnant employees?

1. The plant requires that the employee terminates her job at a certain time during pregnancy (specify) (skip to question 29).

2. Leave is required at a certain stage of pregnancy (specify) (answer question 26-28).

3. The employee may continue working until she requests leave (answer question 26-28)

26. If an employee takes a leave for pregnancy, what provisions are made about her salary?

1. She does not receive any salary.

2. She receives part of her salary as a pregnancy benefit.

3. She receives her normal salary.

27. After delivery the employee who has had pregnancy leave is allowed to remain home for _______________ months without losing her job.

28. What provisions are made for an employee's salary during the leave period after the baby has been born?

1. Does not receive any salary

2. Receives a part of her salary

3. Receives her normal salary

SECTION G

29. How many days of paid sick leave are your employees allowed?

_______________ days   Type of job _______________________________

_______________ days   Type of job _______________________________

30. What is your policy about time off for the following situations?

	no time off	vacation time	time off no pay	time off part pay	use sick days	time off with pay	no policy or don't know
A. Visits to dentist							
B. Visit to the doctor							
C. Laboratory studies at the hospital							
D. Family illness							

31. Does your business have a health insurance plan for your employees?

1. No (skip to question 37)

2. Yes (answer all parts of questions 32-36)

32. What kind of health insurance plan do you have here?

A. Company plan 1) no 2) yes
specify carrier ________________

B. Blue Cross/Blue Shield Plan 1) no 2) yes
specify plan ________________

C. Union Plan 1) no 2) yes
specify plan ________________

D. Other, specify ________________________________

33. Who is eligible (if not a union plan) for health insurance coverage?

A. Are all employees eligible?

1) no (answer parts B & C)
2) yes (skip to question 34)

B. Are all full-time employees eligible?

1) no
2) yes

C. What are the criteria for part-time employees being eligible for insurance coverage?

Minimal income ________________ and/or minimal hours ________________

34. Could you explain if the health insurance plan is a company benefit?

1. Yes, it is a company benefit (employer pays entire premium)

2. No, it requires that the employee pay part of premium and company pay part of premium.

3. No, it requires that the employee pay entire monthly premium.

35. Who may be covered by the health insurance plan?

1. spouse

2. dependent children

3. other dependents

4. spouse and dependent children

5. all dependents

6. other ________________________

7. no one else (skip to question 37)

36. To include others under the health insurance coverage, does the employee have to pay an additional monthly premium?

    1. no

    2. yes

SECTION I

37. We would like to have your views about employing women who are Welfare recipients. Do not read categories.

    A. They work as well as other people who are hired.

    B. To-day there is no difficulty in getting other kinds of employees who do better work.

    C. They never stay long enough to make job training worth while

    D. They generally quit because of health problems.

    E. They are very anxious to do good work

    F. They do not get on with the other workers in the business

    F. Other comments

    ____

    ____

38. Do you have any comments you would like to make about this questionnaire?

    ____

    ____

    ____

APPENDIX G

Methods of Statistical Analysis

All of the information gathered from the questionnaires, physical examinations, laboratory tests and EKG's was coded and punched on computer cards. Great care was taken to insure accurate, consistent coding in some of the more complicated sections, such as the employment and medical histories.

The data on the computer cards were entered into several files on magnetic tape, using a set of prepared computer programs available at Cornell entitled SPSS (Statistical Package for the Social Sciences: N. Nie, D. H. Bent and C. H. Hull, 1970. McGraw-Hill Book Company, N.Y.). These programs allowed easy data management and retrieval, and enabled the production of tables and formatted output with a minimum expenditure of programming time. In addition, special Fortran programs were written for three particular sections of the data that required special treatment: the calculation of the nutrient intake from the diet recall data; the computation of summary variables, such as "percent of adult life employed", from the employment history data; and tabulation of the medical conditions from the medical history on a case-by-case basis rather than by subject, as SPSS requires.

A glossary of statistical methods and terms is included below.

Analysis of variance, one way--a statistical test which determines whether the means of a group of samples differ from each other more than would be expected by chance if the samples were all drawn from the same population. The test is based on the amount of variation between and within the groups, and assumes that the variable is normally distributed.

Chi-square test--a statistical test designed for use with frequency data which tests whether the numbers falling into each group differ significantly from those that would be expected by chance, with a given set of marginal totals. If they do, then the two variables used to classify the data have a significant association. Example:

	Not Working	Working	Total
No sedatives or tranquilizers taken	186	154	340
Taking sedatives or tranquilizers	88	41	129
	274	195	469

Corrected chi-square = 6.483 (P = 0.0109). Since this is a significant result, we conclude that those women who are taking tranquilizers or sedatives are more likely not to be working, or conversely, that the unemployed women are more likely to be taking such drugs.

Correlation coefficient, r--a number, ordinarily ranging from -1 to +1, whose sign and magnitude expresses the direction and amount of linear relationship between two variables. Two variables, x and y, with r = 0 are not associated, but are independent of each other; if r = +1, every value of x has a corresponding value of y which would, if plotted, fall on the same straight line, and x and y both increase together. If r is negative, x increases as y decreases. Correlation coefficients do not necessarily show causation; for instance, a third factor may be affecting both variables. Smaller correlations may be apparently the result of chance; or they may be small, but statistically significant. The latter result would be expected if one variable is only one of several factors which determine the value of the second.

Correlation, partial--a correlation between two variables adjusting statistically for the effects of additional variable(s). Partial correlations may be used to locate so-called "spurious correlations". This means that a significant relationship between two variables, say A and B, is caused solely by the fact that A is correlated with C, which really controls B. (For an example, see the section on diet recall in this report.) Partial correlation also enables one to determine what are the intervening variables linking two correlated variables. For example, in this report it was found that unemployment was assotiated with obesity. But the significance of this correlation could be greatly reduced by controlling for the effects of the medical complications of obesity (heart disease, diabetes, etc.). This indicates that these intervening variables can be used to explain the observed simple correlation between obesity and unemployment.

G-test--another test for frequency data which is used for the same purpose as the chi-square test (see above). The G-test is superior in ease of computation, and has other advantages in certain analytical situations (see Sokal & Rohlf, 1965). Both tests give essentially equivalent results.

Kendall's tau--a rank correlation coefficient. Similar to an ordinary correlation coefficient but uses only the rank of the observation in the sample, rather than the actual quantitative value, for calculations. In this way the relationship between two variables, one or both of which may not be normally distributed, can be more accurately assessed. Tau b is used for tables where both variables can have the same number of different values (square tables) and tau c for rectangular tables. Kendall's tau is used for variables which are divided into a relatively small number of categories, so that tied ranks occur frequently; Spearman correlation coefficients, another type of rank correlation coefficient, are used for ungrouped data.

Normally distributed--coming from a population whose values, if plotted on a histogram, form a symmetrical bell-shaped curve with certain specific technical characteristics.

P--this is the probability that the observed results or differences could occur by chance if there were no real relationship or differences involved, and all the assumptions of the test are true. For instance, if two variables have a correlation, r, whose P value is .001, this correlation would only occur once in a thousand times if there were no real association (not necessarily causal) between the two variables. To determine whether the outcome of a statistical test indicates significance, P is compared with a predetermined alpha level (see "significant").

Regression, simple linear--a statistical technique which expresses the relationship between two variables, a dependent variable y and an independent variable x, in terms of an equation, $y = bx+a$. This equation is the one representing the line which best fits the data. That is, the sum of the squared distances from each of the observed points (x,y) to the line is minimized. In the equation calculated, b is called the regression coefficient, and a is a constant.

Regression, multiple--a statistical technique which produces an equation to predict the value of a dependent variable from the values of a number of independent variables. The mathematics of the procedure is analogous to that of simple linear regression; the method assumes that the dependent variable is linearly related to each of the independent variables.

Regression, normalized or standardized multiple--this is a multiple regression equation which has been corrected for the scale of the variables. Instead of years, units, dollars, etc., each variable is expressed in terms of a standard unit with mean zero and standard deviation 1. This enables the researcher to assess the relative importance, or influence, of each independent variable on the dependent variable without the confounding effect of non-comparable units. The sign of each standardized regression coefficient indicates the direction of the effect on the variable being predicted, and the absolute value indicates the importance of the independent variable's influence.

Significant--the result of a statistical test is said to be significant if the probability, P, of the observed results occurring by chance is less than a previously specified level, known as the alpha level. By convention this level is usually taken to be .05 (one time in twenty) for significant results and .01 (one time in a hundred) for very significant results. However, in certain circumstances when a large number of tests, such as a large number of correlation coefficients, are performed at one time, a stricter definition of what constitutes a significant result is required to ignore chance results.

General statistical caveat--none of the data in a survey study of this sort can be taken to show causation, unlike a controlled experiment. Associations and correlations which are significant in one sample population may not always hold for another group; and longitudinal studies are necessary where experimental studies are not possible.

Reference:

Sokal, R. R. and Rohlf, F. J. 1969 Biometry: The principles and practice of statistics in biological research. W. H. Freeman and Co., San Francisco. 776 pp.

APPENDIX H

Oral Health Status, Practices, and Beliefs of Women in Low-Income Rurban Areas of New York State
(Synopsis of a Thesis by Katherine Watson)

Restorative Estimates

Estimations of restorative costs based on findings from the oral examination were made using the *Medicaid Fee Schedule for New York State* (1969) and the mean fee for the state reported in the *National Dental Fee Survey, 1970*. In view of the criticism directed at the Medicaid schedule, the difference between the fees indicated that separate estimates would be of interest. Costs were computed in the following manner. The number of decayed, restorable teeth was multiplied by the average cost for one, two and three surface fillings as decay was not determined by surfaces. Nonrestorable teeth (extensive decay or very severe periodontal disease) and nondecayed teeth requiring removal for prosthetic reasons were multiplied by the cost for simple tooth extraction with anesthetic. The presence of gingivitis, plaque and/or calculus was taken as indication for prophylaxis. Tooth mobility and/or the presence of gingival pockets indicated periodontal disease of some magnitude. Following consultation with a periodontist, the cost for treatment of generalized disease of this severity was estimated to be $500 per subject. It is realized that such treatment is unlikely to be covered under Medicaid, however an estimate of treatment cost is given. Unserviceable dentures, lack of dentures or full arch extraction indicated the need for denture(s). Subjects who did not wear dentures for reasons that did not indicate unserviceability were not included in the cost estimate. Subjects missing four or more teeth in one jaw (excluding third molars) were assumed to require a partial denture. Current Medicaid regulations require fewer than eight teeth be present for the provision of a partial denture. Rebasings and other prosthetic servicing required were indicated on the oral examination.

Estimated Needs and Costs

Estimation of the dental needs of these women indicates the magnitude of the immediate problem facing those responsible for the delivery of dental care to indigent rurban women in the state. It is difficult to compare present estimates with the report of services and costs delivered under Medicaid in Chemung County (Faine, R. C. and Brusseau, L. Medicaid and dentistry: The Title XIX program in Chemung County, N.Y. J. Am. Dent. Assoc. 83:134-139, 1971) over a one-year period. The Chemung County study represented a younger population and included services actually delivered, including radiographs. Estimates for the present study did not include radiographs. Interestingly, a similar mean patient cost ($70 compared to $71.82 in the present study) was reported. Thirty-seven percent of services delivered in Chemung County were restorative, a figure similar to national figures (37.8%) and to that reported for Erie County (36.0%) (O'Shea, R. M. and Bissell, G. D. Dental services under Medicaid: The experience of Erie County, New York. Am. J. Public Health 59:832-840, 1969). Dentures represented 2.9% of total services in Chemung County.

Table 2W*. DMF Scores and Components - Mean Values for Total Subsample, Dentulous Women, and by Age, Education, and County.

		Decayed			Missing			Filled			DMF		
		$\bar{x}$	SD	SE	$\bar{x}$	SD	SE	$\bar{x}$	SD	SE	$\bar{x}$	SD	SE
Subsample	(107)	1.1	1.9	0.2	21.5	10.4	1.0	4.1	5.8	0.6	25.6	5.7	0.6
Dentulous	(66)	1.7	2.2	0.3	15.0	7.9	1.0	6.6	6.3	0.8	23.3	6.0	0.7
Age													
30-34	(16)	1.3	1.7	0.4	20.1	9.0	2.2	4.6	5.6	1.4	26.0	5.4	1.4
34-39	(31)	1.3	2.6	0.5	21.6	9.7	1.8	4.0	5.2	0.9	26.9	5.3	1.0
40-44	(26)	0.8	1.4	0.3	19.9	11.4	2.2	4.1	6.1	1.2	24.8	8.4	1.7
45-49	(17)	1.1	1.6	0.4	20.9	11.7	2.8	4.8	6.6	1.6	26.8	6.2	1.5
50-54	(11)	1.3	2.1	0.6	23.4	11.4	3.4	4.5	8.0	2.4	29.2	5.2	1.6
55-59	(4)	0.3	0.5	0.3	28.5	4.0	2.0	0.0	0.0	0.0	28.8	3.8	1.9
60-64	(2)	0.0	0.0	0.0	32.0	0.0	0.0	0.0	0.0	0.0	32.0	0.0	0.0
Education													
0-4 yr	(2)	2.5	3.5	2.5	12.0	12.7	9.0	2.0	2.8	2.0	16.5	19.1	13.5
5-8 yr	(18)	0.2	0.5	0.1	24.5	9.8	2.3	1.8	3.3	0.8	26.5	7.3	1.7
9-11 yr	(48)	0.9	1.6	0.2	23.9	9.5	1.4	2.4	4.4	0.6	27.2	5.9	0.9
12 yr	(35)	1.3	2.3	0.4	17.5	10.8	1.8	3.5	7.1	1.2	26.3	5.3	0.9
12 yr+	(4)	3.8	2.5	1.3	17.0	7.2	3.6	5.0	8.0	4.0	25.8	6.0	3.0
County													
Chemung	(14)	0.4	0.9	0.2	25.2	8.9	2.4	3.0	7.0	1.9	28.6	4.8	1.3
Cortland	(11)	0.6	1.6	0.5	24.6	9.2	2.8	2.3	3.9	1.2	27.5	5.5	1.7
Broome	(46)	1.0	2.2	0.3	23.6	9.8	1.5	2.8	4.8	0.7	27.4	5.9	0.9
Tompkins	(14)	1.5	2.0	0.5	18.0	11.3	3.0	5.1	5.4	1.4	24.6	8.5	2.3
Cayuga	(18)	1.8	1.6	0.4	14.0	8.9	2.1	8.3	7.1	1.7	24.1	7.0	1.6
Onondaga	(4)	1.0	1.4	0.7	22.0	12.5	6.3	5.3	6.7	3.3	28.3	4.5	2.3

SD = Standard deviation
SE = Standard error

*From Watson, K., 1973. Oral health status, practices and beliefs of women in low-income rurban areas of New York State (Master's thesis, Cornell University).

Table 4W.* Oral Examination Findings Related to Periodontal Disease

	Total Subsample (n=107)		Dentulous Women (n=66)		Dentulous Women Aged 35-44 (n=37)	
	Number	Percent	Number	Percent	Number	Percent
Gingivitis	(40)	37.4	(40)	60.6	(24)	64.9
Bleeding gums[1]	(16)	15.0	(16)	24.2	(12)	32.4
Tender gums[1]	(16)	15.0	(16)	24.2	(12)	32.4
Pockets	(23)	21.5	(23)	34.8	(12)	32.4
Mobility	(22)	20.6	(22)	33.3	(12)	32.4
Calculus	(58)	54.2	(58)	87.9	(32)	86.5

[1] These two findings came from questions asked in the medical examination.

*From Watson, K., 1973. Oral health status, practices and beliefs of women in low-income rurban areas of New York State (Master's thesis, Cornell University).

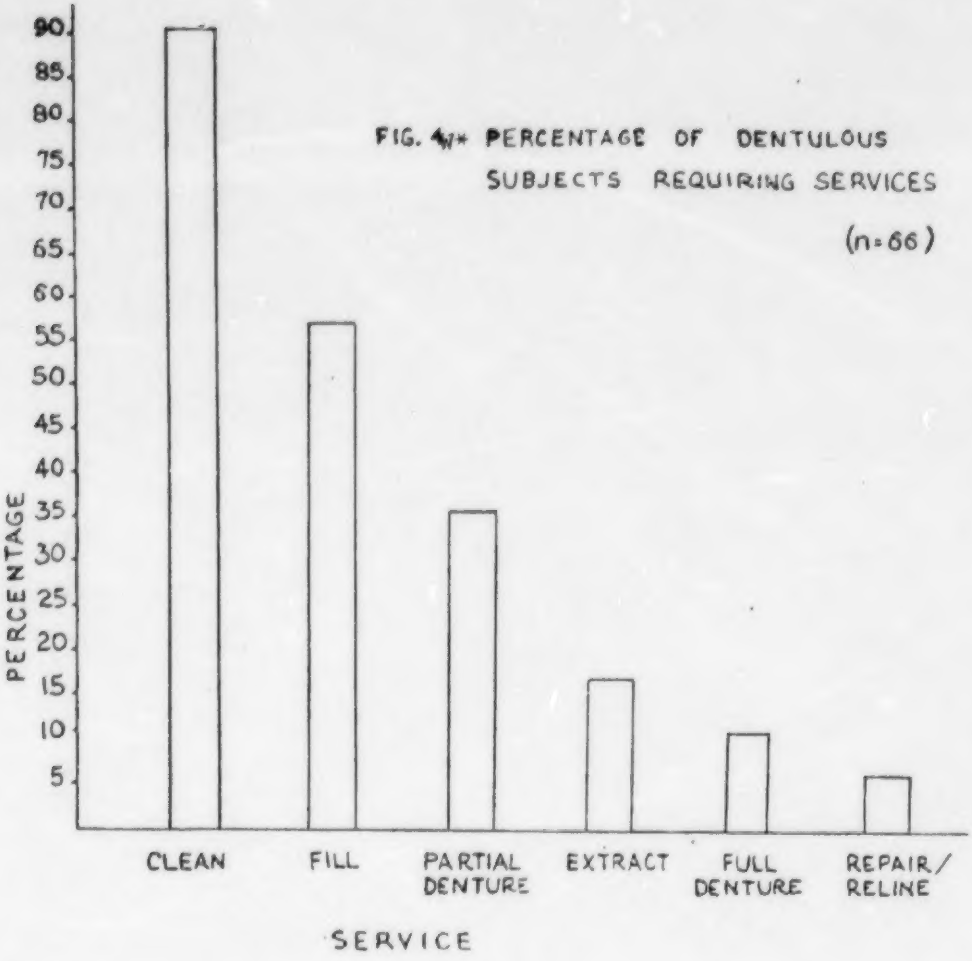

FIG. 4W* PERCENTAGE OF DENTULOUS SUBJECTS REQUIRING SERVICES (n=66)

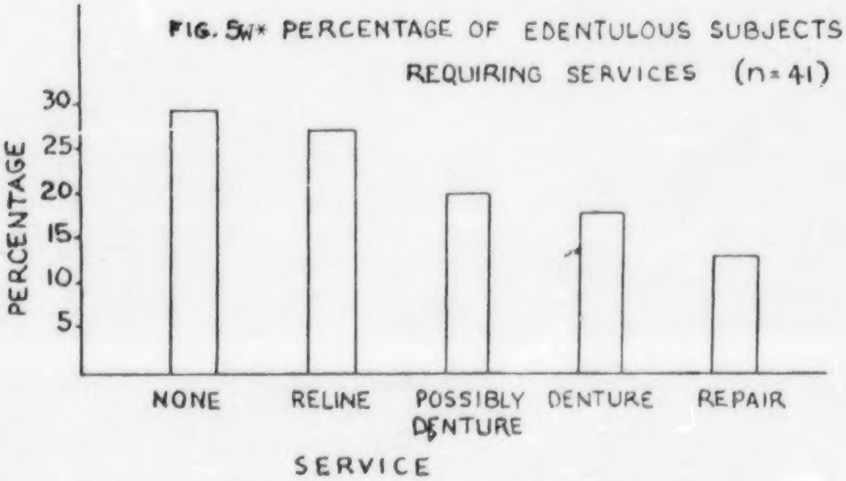

FIG. 5W* PERCENTAGE OF EDENTULOUS SUBJECTS REQUIRING SERVICES (n=41)

*From Watson, K., 1973. Oral health status, practices and beliefs of women in low-income rurban areas of New York State (Master's thesis, Cornell University).

Table 5W*. Medicaid and Mean New York State Fees Used for Estimating Costs

Service	Medicaid Fee Schedule	Mean Fee New York State
Filling (average for 1,2 and 3 surface fillings)	$ 9.00	$ 13.21
Extraction	6.00 - first extraction 5.50 - each additional	10.32
Prophylaxis	7.00	9.72
Denture - full	120.00	212.86
- partial (with clasps)	88.00	183.98
Rebasing (partial or full)	28.00	59.43
Repair to denture	13.00 (including one tooth) 10.00 (no teeth)	24.34 (including one tooth)

Table 5 lists the appropriate fees under both schedules used in estimating restorative costs. Total services and their respective costs are summarized in Table 6. The lack of precision in measuring periodontal disease, the validity of approximating the cost of treatment and the reality of providing such care indicated that such costs should not be included in further discussion of dental needs. There is reason to believe that successful treatment of caries, prophylaxis and preventative education may have an impact on periodontal disease.

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*From Watson, K., 1973. Oral health status, practices and beliefs of women in low-income rurban areas of New York State (Master's thesis, Cornell University).

Table 6W*. Summary of Services Required

	Number	Medicaid Cost	N.Y.S. Cost
Fillings	114	$ 1026.00	$ 1505.94
Extractions (total)	94	523.00	970.08
Prophylaxis	60	420.00	583.20
Dentures - full	20	2400.00	4257.20
- partial	31	2728.00	5703.38
Rebasings	17	476.00	1010.31
Repairs	10	112.00	243.40
Periodontal*	28	-	-
Total cost of services:			
- excluding periodontal treatment		7685.00	14273.51
- including periodontal treatment		21685.00	28273.51
Average subject cost:			
- excluding periodontal		71.82	133.40
- including periodontal		202.66	264.24

*The cost of periodontal treatment was estimated at $500. There was no fee for complete treatment in either fee schedule. The recommended treatment was curettage on all four quadrants.

*From Watson, K., 1973. Oral health status, practices and beliefs of women in low-income rurban areas of New York State (Master's thesis, Cornell University).

Restorations were 33% of the total services in the present study and dentures (excluding repairs and relines) were 15%. Restorations represented only 13% of the total cost of services, however, and dentures represented 67.1%. The significantly higher cost of needs which accompany more advanced disease is evident.

The Chemung County study concluded that a large proportion of the total costs were devoted to few patients with prosthetic needs. The nature of needs in older subjects, particularly when they have experienced considerable oral neglect, are most likely to be prosthetic and consequently the older the patient, the higher the average cost. (McCall, 1938, calculated that lack of early and incremental dental care resulted in a lifetime expenditure for dental care 2.3 times that when early and regular care are provided, and by 60 years of age only the former will be wearing dentures.) O'Shea and Bissell noted that although subjects 55 and over constituted only 8% of the sample, they received services which represented 22.2% of total expenditures. The cost of care was reported to be two to four times greater for adults than for children (Brightman, I. J. and Allaway, N. C. Evaluation of medical and dental care under the Medical Assistance Program. Am. J. Public Health 59:2215-2220, 1969).

The discrepancies between costs under the Medicaid schedule and under the mean New York State fee deserve discussion. The Medicaid fee schedule has been cited as a major reason for the inadequate and poor quality of dental care delivered under Title XIX funds. Private practitioners commonly determine fees based on the types of services provided, the amount of hourly revenue needed to meet financial objectives, and the amount of time required for a given service if the projected hourly income is to be met at current fees (Hamilton, A. I. Private versus public enterprise in dentistry: An economic analysis. J. Am. Dent. Assoc. 75:359-375, 1967). The influence that a drop in fees can have on the kind and quality of work is evident. A conscientious practitioner is reluctant to accept many patients at a lower fee. Education and prevention are sacrificed as they represent non-repairative services and reimbursement for these is not evident on the fee schedule. It is clear that considerable evaluation of current dental care service under Medicaid is needed. Professional responsibility as well as adequate federal funding are required to facilitate the delivery of care by professionals who are more than simply repairmen. If not, the population served is likely to remain crisis, or symptomatically, oriented in their use of dental services. The high restorative needs will thus continue in low-income groups, quite possibly for decades. Weeks reported the association between oral disease in childhood and dental practices in later family life (Weeks, H. A. Family Spending Patterns and Health Care. Harvard University Press, Mass., 1961). Families in which the mother had experienced extensive disease early in life were least likely to use dental services.

Conclusions

The group of women participating in this oral health study were representative of middle-aged women in poverty groups in rurban New York State (assuming that volunteers are not different from non-volunteers in their oral health status and practices).

Results from the oral health examination clearly indicated that the oral health status of these women was significantly worse than that of the average American woman of similar age a decade ago. However, subjects from the lowest income group in the 1962 survey had a mean number of filled teeth which was not significantly different from the mean for the present study or from the mean for low-income ratio states in the recent Ten-State Nutrition Survey. The persistence of an economic disparity in the receipt of dental care is evident. This is seen in the higher tooth mortality ratios and the lower filled-tooth ratios. There does not appear to be a higher prevalence of attack by oral disease in lower income groups, as indicated by similar prevalence figures for younger people from low and high-income groups. The difference is seen when comparing components of the DMF scores in children which reflect the status of the teeth in the DMF. By adulthood, the total disease experience, as reflected by the DMF, may be significantly greater in low-income groups because of the progression of caries and their tendency to predispose one to further oral disease. Thus poor people are not more susceptible to dental disease (at least until extensive disease causes deterioration of the oral environment) but disease processes are not being arrested. The most dramatic findings in the present study were the high tooth mortality and the early age at which these women became edentulous.

Extensive oral needs and their estimated cost indicated why recent spending under Title XIX funds has been so great. The questionable restorative value of periodontal treatment in view of its high cost may be reason to limit such therapy under public programs. However, the accepted prevention measures (appropriate to both caries and periodontal disease) cannot be withheld from such women (with implications for the oral health of their children) if a serious national prevention effort is entertained. The oral needs of these women further indicated the significant impact that the public funding of dental care has had and will have on the demand for manpower in dental health.

The irregular and symptomatic utilization of dental services as well as the poor oral hygiene habits found in this sample of middle-aged, low-income women do not appear to be characterized by apathy, lack of awareness, or laziness. It was obvious that the women placed the appropriate value on oral health but had not and did not practice preventative oral health behavior. They were well aware of a life-time of oral neglect and of the factors which would have helped to prevent this neglect. These factors included removal of the financial barrier, and those such as fear and ignorance which would also be overcome if regular and comprehensive care had been provided. All the women had experienced some dental care and were likely experiencing somewhat more since Medicaid. However, the low frequency with which the dentist was cited as a source of information regarding oral health clearly indicated that these women were not provided with the complete and regular dental care necessary to develop positive oral health behavior.

Income is a reliable predictor of the frequency of dental visits and this would appear to explain the oral health status of these women. Despite the recent availability of Medicaid, dental care was irregular and preventative behavior was not obvious. Removal of the financial barrier made restorative care accessible but appears to have been unsuccessful in developing preventative practices. This is indicative of the need for qualitative evaluation of care delivered under public programs. It also confirms the need to make comprehensive, incremental oral health care a high priority.

Preventative behavior and good oral health habits should be initiated in childhood with regular dental care, education, and motivation provided thereafter without exception. Only in this way can the desirable practices, habits, behavior and consequently attitudes be established. Comprehensive school programs reach a large number of the nation's vulnerable population. Nevertheless, each individual is in need of the education and encouragement as well as the treatment and prophylaxis provided by regular dental care. Public health dentistry must provide programs of care which provide these positive experiences that will reduce fear and ignorance and encourage preventative oral health behavior.

Implications for Education

Recognition of the higher risk of individuals from low-income groups to practice symptomatic or curative behavior should indicate that they require even greater efforts in preventative education and motivation. The inaccessibility of dental care to them has prevented exposure to continued education and reinforcement of oral health habits which can be afforded through regular, comprehensive care. Screening patients for dental prepayment plans and government sponsored dental care programs on the basis of their ability to control plaque infections (as have been suggested by Keyes) requires that an appropriate opportunity be given for learning and demonstrating such ability. If this screening is made on the basis of current behavior, there is the risk that the programs will be inaccessible to the very people for whom they were intended.

Primary prevention efforts in education related to oral hygiene and dietary habits are an integral part of health education. Principles of normal nutrition education incorporate those that are relevant to oral health. The opportunity for mutual reinforcement should not be overlooked. This requires appropriate curriculum structuring in schools of nutrition, dentistry, and related auxiliary training. Nutritionists with an understanding and appreciation of oral health may capitalize on this more objective health parameter as a motivational factor in promoting sound nutritional habits. It is certainly a more tangible concept than "feeling better" or "good for you". On the other hand, dentists must be more aware of nutritional implications, both pre- and post-eruptively, that dietary habits have for oral health. In view of the shortage of dentists it is neither reasonable nor practical to make them adept at dietary evaluation. Rather they need only be aware of the basic nutritional concepts and the potential services a dietitian or nutritionist could contribute to the oral health of their patients. Alternatively, the appropriate emphasis and training in dietary evaluation during the schooling of oral hygienists by knowledgeable instructors can meet this need. Another possibility is having an auxiliary record food intake on the necessary format for centralized computer analysis, a practice which is currently being employed and which facilitates the appropriate instruction regarding dietary habits.

An opportunity for a coordinated effort is presented by the establishment of regular dental care and school feeding programs in the nation's schools. Both provide possibilities for education, for demonstration, and for practice of behavior related to the attainment and maintenance of good oral health. Such positive experiences encourage the early establishment of health habits and the development of preventative behavior. Motivation is provided by the awareness of the consequences of oral ill-health and the advantages of the maintenance of good oral health.

Adult education involves continued exposure to new information and further encouragement of preventative behavior. An additional motivational factor related to adult education lies in their realization that their oral health practices have considerable influence upon those of their children. They can then actively reinforce oral health education their children have received, while establishing more preventative self care habits.

Implications for Dental Care

The need for increased dental manpower has been recognized by those in the field of public health dentistry. Increased emphasis on preventative aspects of care requires increased productivity and appropriate training. The obvious economic efficiencies related to the increased utilization of auxiliaries with greater delegation of responsibilities to them can not be ignored. The magnitude of the cost of delivering a basic level of oral health care to the dentally-neglected of the nation necessitates such an approach. Successful use of auxiliaries in other countries has included reports of better oral health, economic savings and removal of yet another barrier to dental care--fear. Their expected threat to the dental profession has proven unfounded. In fact, the dentists have gained more cooperative patients.

The structure and financing of Medicaid have been described as unable to provide either adequate and uniform coverage or effective controls on the cost and quality of care. This major step in the delivery of dental and health care to the indigent has been in effect long enough for evaluation to be completed. Such data provide direction for program modification and restructuring. If the goal for dental care under Medicaid is the improvement of oral health (rather than merely removing the financial barrier to dental care) the objectives of the program must be stated in terms of expected changes in oral health status and program evaluation should include measurement of the extent to which improvement has been achieved. This requires evaluation of the way care is delivered under this program. If public funds are being spent for dental treatment, it would be more effective and more economical to use funds also for preventative programs. It remains to be seen if the problems of political theory, funding, manpower, and methodology can be solved under the present legislation in order to achieve a comprehensive program in public health dentistry.

Comprehensive care means complete care, incorporating aspects of primary, secondary and tertiary prevention. The well-known measures of primary prevention include oral hygiene, dietary habits, regular dental care and fluoridation. The first three depend largely on manpower and individual responsibility. The latter is the responsibility of those involved with health care and education. Despite the twenty-seven years that fluoridation has been in use in the United States, 44% of the population is not yet served with fluoridated water supplies. This method of primary prevention represents the most effective and equitable means of caries prevention at the lowest cost in money and manpower. Secondary and tertiary prevention involve the restoration and rehabilitation services delivered by professional care. Effective primary prevention will reduce the need for the latter two and dental care can address itself to other major oral problems such as periodontal disease and malocclusion.

Finally, regional variations in oral health needs, and even variation among counties as suggested by the present study, indicate that programs of oral health care must be appropriate to the specific needs and resources of each county and community. Thus needs and resources must be known. The oral health status of the people, the economic status of the community, and professional and para-professional manpower, the extent to which the school system has incorporated oral health care and education, the effectiveness and accessibility of transportation and child care services--all are variables to be considered when developing a program to deliver dental care to a community.

Growing public concern for the attainment and maintenance of good oral health will promote community commitment to these goals. The importance of clear community priorities in determining the implementation of and participation in programs has been recognized. The desired oral health behavior can be incorporated into the social structure of dental care within the community. This will help overcome the problems of personal motivation on the part of the individual. Effective program control, including costs, is necessary for quality and comprehensive care. Community leadership in this direction depends upon those aware of the public health problem of oral disease and of the means to develop effective programs of dental care. Individuals in the community must be exposed to and involved in such health care planning. Thus their attitudes towards oral health care are important determinants of community action. These attitudes appear to grow from positive oral health experience and regular preventative behavior, and are thus related to the delivery of dental care and education. This brings us back to the important roles of the dental profession and health educators.

The responsibility for providing dental care to the indigent has long been ignored, with the results that oral disease has reached the severity evidenced by the women in the present survey. The challenge which faces the dental profession, health educators, and health workers must be taken up in dental offices, schools, and health centers across the country. If it is not, the deplorable oral health conditions reported in the present study will be perpetuated.

Summary

The magnitude of oral disease in the United States has been well documented. It has been suggested that dental needs of the population are decreasing due to higher incomes, higher levels of education, more comprehensive dental care and fluoridation.

The association of oral disease with low-income and education suggests that a measure of the changes in oral health needs of low socioeconomic groups would be an important indicator of any major decline in unmet needs. A commitment to a national public dental health program has been lacking, though public funding of dental care has shown some growth. Failure of third party payment of dental care to initiate regular patterns of dental service utilization and preventative oral health practices by the recipients of care has drawn criticism to these efforts.

The present study assesses the oral health status of a sample of middle-aged women from low-income groups in rurban areas of New York State. Results confirm extensive neglect of the oral cavity, indicating less dental care and greater dental needs than the average American woman of similar age in 1962. These women have experienced high tooth mortality and edentulousness at an early age. Evaluation of their beliefs, practices, and knowledge related to oral health indicates that beliefs are similar to those reported for the general population. However, practices and knowledge show lack of exposure to comprehensive professional care. It is suggested that incremental and comprehensive dental care, initiated in childhood and continued throughout life, provide the positive experiences necessary for determining preventative oral health behavior. Thus, the sudden delivery of free mechanical care after a lifetime of inadequate and noncomprehensive care can hardly be expected to give birth to preventative oral health behavior.

Recognition of this fact is important in planning the delivery of dental care and the training of manpower to deliver that care to all segments of the population. Otherwise, programs will merely provide stop-gap measures to alleviate major disease; the concept of prevention will be ignored.

Appendix I. Extract from thesis by Barbara Zelleznick. Obesity, diet and work: A study of welfare and ex-welfare women (in preparation).

The foods coded on the diet recall were divided into twenty-seven food groups; then the number of times a food from each of these groups was eaten during the day was computed. Using this information, a measure of diversity was calculated using Brillouin's Index H. If N is the number of servings of particular foods recalled, and N_j the number of these belonging to the jth food group, then

$$H = \frac{1}{N} \log \frac{N!}{N_1!N_2!\ldots N_{27}!}$$

This index will be influenced both by the number of food groups in which foods were eaten, and by the extent to which foods tended to be clustered in one or a few food groups (K. Eickwort, personal communication; Pielou, 1969). That is, if two women eat the same number of foods, but one woman eats five foods from one group and one from the second, while the second eats three foods from each group, the second woman's diet will be more diverse, other things being equal. This index in itself is not meaningful, but can be correlated with other variables.

The diversity of foods in the diet was positively related to meal frequency, carbohydrate, fat, protein, iron, calcium, and vitamin C intake; also with education. It was negatively associated with obesity. These findings may in part reflect errors of recall (see section on diet history), but it is also suggested that dietary diversity is dependent on the amount of food eaten as well as on the education of the subject.

Literature Cited

Pielou, E. C. 1969. Introduction to Mathematical Ecology. Wiley-Interscience, New York. pp. 221-235.

Appendix J. List of three digit categories (codes) used in this study, from the International Classification of Diseases (8th Revision), adapted for use in the U.S., 1967. U.S. Dept. of Health, Education and Welfare, Public Health Service, National Center for Health Statistics. PHS Publication No. 1693.

Intestinal infectious diseases (000-009)
- 001 Typhoid fever
- 005 Food poisoning (bacterial)

Tuberculosis (010-019)
- 011 Pulmonary tuberculosis

Zoonotic bacterial diseases (020-027)
- 023 Brucellosis

Other bacterial diseases (030-039)
- 033 Whooping cough
- 034 Streptococcal sore throat and scarlet fever
- 035 Erysipelas
- 038 Septicemia

Poliomyelitis and other enterovirus diseases of central nervous system (040-046)
- 043 Acute poliomyelitis, unspecified
- 044 Late effects of acute poliomyelitis
- 046 Other enterovirus diseases of central nervous system

Viral diseases accompanied by exanthem (050-057)
- 053 Herpes zoster
- 055 Measles
- 056 Rubella

Other viral diseases (070-079)
- 070 Infectious hepatitis
- 075 Infectious mononucleosis
- 079 Other viral diseases

Syphilis and other venereal diseases (090-099)
- 090 Congenital syphilis

Mycoses (110-117)
- 110 Dermatophytosis

Malignant neoplasm of bone, connective tissue, skin & breast (170-174)
- 173 Other malignant neoplasm of skin

Malignant neoplasm of genitourinary organs (180-189)
- 180 Malignant neoplasm of cervix uteri
- 182 Other malignant neoplasm of uterus
- 183 Malignant neoplasm of ovary, fallopian tube, and broad ligament

Benign neoplasms (210-228)

210 Benign neoplasm of buccal cavity and pharynx
211 Benign neoplasm of other parts of digestive system
214 Lipoma
215 Other benign neoplasm of muscular and connective tissue
216 Benign neoplasm of skin
217 Benign neoplasm of breast
218 Uterine fibroma
220 Benign neoplasm of ovary
221 Benign neoplasm of other female genital organs
224 Benign neoplasm of eye
225 Benign neoplasm of brain and other parts of nervous system

Neoplasm of unspecified nature (230-239)

232 Neoplasm of unspecified nature of skin and musculoskeletal system
234 Neoplasm of unspecified nature of uterus
235 Neoplasm of unspecified nature of ovary
236 Neoplasm of unspecified nature of other female genital organs
239 Neoplasm of unspecified nature of other and unspecified organs

Diseases of thyroid gland (240-246)

240 Simple goiter
241 Nontoxic nodular goiter
242 Thyrotoxicosis with or without goiter
243 Cretinism of congenital origin
244 Myxedema
246 Other diseases of thyroid gland

Diseases of other endocrine glands (250-258)

250 Diabetes mellitus
253 Diseases of pituitary gland
255 Diseases of adrenal glands

Avitaminoses and other nutritional deficiency (260-269)

263 Other vitamin B deficiency
265 Vitamin D deficiency
267 Protein malnutrition
268 Nutritional marasmus
269 Other nutritional deficiency

Other metabolic diseases (270-279)

273 Other and unspecified congenital disorders of metabolism
277 Obesity not specified as of endocrine origin

Diseases of the blood and blood-forming organs (280-289)

280 Iron deficiency anemias
281 Other deficiency anemias
285 Other and unspecified anemias
286 Coagulation defects
287 Purpura and other hemorrhagic conditions

Psychoses (290-299)

294 Psychosis associated with other physical conditions
296 Affective psychoses
299 Unspecified psychosis

Neuroses, personality disorders, and other nonpsychotic mental disorders (300-309)

300 Neuroses
301 Personality disorders
303 Alcoholism
305 Physical disorders of presumably psychogenic origin
209 Mental disorders not specified as psychotic associated with physical conditions

Mental retardation (310-315)

310 Borderline mental retardation
311 Mild mental retardation
312 Moderate mental retardation

Inflammatory diseases of central nervous system (320-324)

320 Meningitis
323 Encephalitis, myelitis, and encephalomyelitis

Other diseases of central nervous system (340-349)

340 Multiple sclerosis
343 Cerebral spastic infantile paralysis
344 Other cerebral paralysis
345 Epilepsy
346 Migraine
347 Other diseases of brain

Diseases of nerves and peripheral ganglia (350-358)

350 Facial paralysis
352 Brachial neuritis
353 Sciatica
354 Polyneuritis and polyradiculitis
355 Other and unspecified forms of neuralgia and neuritis
356 Other diseases of cranial nerves

Inflammatory diseases of the eye (360-369)

360 Conjunctivitis and ophthalmia
361 Blepharitis
364 Iritis
366 Other inflammation of uveal tract
369 Other inflammatory diseases of eye

Other diseases and conditions of eye (370-379)

373 Strabismus
374 Cataract
375 Glaucoma
378 Other diseases of eye
379 Blindness

Diseases of the ear and mastoid process (380-389)

380 Otitis externa
381 Otitis media without mention of mastoiditis
382 Otitis media with mastoiditis
383 Mastoiditis without mention of otitis media
384 Other inflammatory diseases of ear
385 Meniere's disease
386 Otosclerosis
387 Other diseases of ear and mastoid process
389 Other deafness

Active rheumatic fever (390-392)

390 Rheumatic fever without mention of heart involvement
391 Rheumatic fever with heart involvement
392 Chorea

Chronic rheumatic heart disease (393-398)

394 Diseases of mitral valve
395 Diseases of aortic valve

Hypertensive disease (400-404)

401 Essential benign hypertension
402 Hypertensive heart disease
403 Hypertensive renal disease

Ischemic heart disease (410-414)

410 Acute myocardial infarction
412 Chronic ischemic heart disease
413 Angina pectoris

Other forms of heart disease (420-429)

421 Acute and subacute endocarditis
426 Pulmonary heart disease
427 Symptomatic heart disease
428 Other myocardial insufficiency
429 Ill-defined heart disease

Cerebrovascular disease (430-438)

430 Subarachnoid hemorrhage
433 Cerebral thrombosis
435 Transient cerebral ischemia

Diseases of arteries, arterioles, and capillaries (440-448)

440 Arteriosclerosis
441 Aortic aneurysm (nonsyphilitic)
442 Other aneurysm
443 Other peripheral vascular disease

Diseases of veins and lymphatics, and other diseases of circulatory system (450-458)

450 Pulmonary embolism and infarction
451 Phlebitis and thrombophlebitis
454 Varicose veins of lower extremities
455 Hemorrhoids
456 Varicose veins of other sites

Acute respiratory infections, except influenza (460-466)

460 Acute nasopharyngitis (common cold)
463 Acute tonsillitis
466 Acute bronchitis and bronchiolitis

Pneumonia (480-486)

480 Viral pneumonia
485 Bronchopneumonia, unspecified
486 Pneumonia, unspecified

Bronchitis, emphysema, and asthma (490-493)

490 Bronchitis, unqualified
491 Chronic bronchitis
492 Emphysema
493 Asthma

Other diseases of upper respiratory tract (500-508)

503 Chronic sinusitis
504 Deflected nasal septum
505 Nasal polyp
506 Chronic laryngitis
507 Hay fever
508 Other diseases of upper respiratory tract

Other diseases of respiratory system (510-519)

510 Empyema
511 Pleurisy
512 Spontaneous pneumothorax
517 Other chronic interstitial pneumonia
519 Other diseases of respiratory system

Diseases of oral cavity, salivary glands, and jaws (520-529)

524 Dento-facial anomalies including malocclusion
529 Diseases of the tongue and other oral conditions

Diseases of esophagus, stomach, and duodenum (530-537)

530 Diseases of esophagus
531 Ulcer of stomach
532 Ulcer of duodenum
533 Peptic ulcer, site unspecified
535 Gastritis and duodenitis
536 Disorders of function of stomach
537 Other diseases of stomach and duodenum

Appendicitis (540-543)

540 Acute appendicitis
541 Appendicitis, unqualified
542 Other appendicitis

Hernia of abdominal cavity (550-553)

550 Inguinal hernia without mention of obstruction
551 Other hernia of abdominal cavity without mention of obstruction
553 Other hernia of abdominal cavity with obstruction

Other diseases of intestine and peritoneum (560-569)

560 Intestinal obstruction without mention of hernia
561 Gastroenteritis and colitis, except ulcerative, of non-infectious origin
562 Diverticula of intestine
564 Functional disorders of intestines
565 Anal fissure and fistula
566 Abscess of anal and rectal regions
567 Peritonitis

Diseases of liver, gallbladder, and pancreas (570-577)

571 Cirrhosis of liver
573 Other diseases of liver
574 Cholelithiasis
575 Cholecystitis and cholangitis, without mention of calculus
577 Diseases of pancreas

Nephritis and nephrosis (580-584)

580 Acute nephritis
582 Chronic nephritis

Other diseases of urinary system (590-599)

590 Infections of kidney
592 Calculus of kidney and ureter
593 Other diseases of kidney and ureter
595 Cystitis
596 Other diseases of bladder
598 Stricture of urethra
599 Other diseases of urinary tract

Diseases of breast, ovary, fallopian tube, and parametrium (610-616)

610 Chronic cystic disease of breast
611 Other diseases of breast
613 Chronic salpingitis and oophoritis
614 Salpingitis and oophoritis, unqualified
615 Other diseases of ovary and fallopian tube
616 Diseases of parametrium and pelvic peritoneum (female)

Diseases of uterus and other female genital organs (620-629)

620 Infective diseases of cervix uteri
621 Other diseases of cervix
622 Infective diseases of uterus (except cervix), vagina, and vulva
623 Uterovaginal prolapse
624 Malposition of uterus
625 Other diseases of uterus
626 Disorders of menstruation
627 Menopausal symptoms
629 Other diseases of female genital organs

Complications of pregnancy (630-634)

631 Ectopic pregnancy
632 Hemorrhage of pregnancy
633 Anemia of pregnancy

Urinary infections and toxemias of pregnancy and the puerperium (635-639)

637 Pre-eclampsia, eclampsia, and toxemia, unspecified

Abortion (640-645)

643 Spontaneous abortion
645 Other abortion

Delivery (650-662)

651 Delivery complicated by placenta previa or antepartum hemorrhage
653 Delivery complicated by other postpartum hemorrhage

Infections of skin and subcutaneous tissue (680-686)

680 Boil and carbuncle
682 Other cellulitis and abscess
683 Acute lymphadenitis
684 Impetigo

Other inflammatory conditions of skin and subcutaneous tissue (690-698)

690 Seborrheic dermatitis
691 Infantile eczema and related conditions
692 Other eczema and dermatitis
696 Psoriasis and similar disorders
698 Pruritis and related conditions

Other diseases of skin and subcutaneous tissue (700-709)

700 Corns and callosities
702 Other dermatoses
704 Diseases of hair and hair follicles
706 Diseases of sebaceous glands
707 Chronic ulcer of skin
708 Urticaria
709 Other diseases of skin

Arthritis and rheumatism, except rheumatic fever (710-718)

712 Rheumatoid arthritis and allied conditions
713 Osteoarthritis and allied conditions
714 Other specified forms of arthritis
715 Arthritis, unspecified
718 Rheumatism, unspecified

Osteomyelitis and other diseases of bone and joint (720-729)

720 Osteomyelitis and periostitis
721 Osteitis deformans
722 Osteochondrosis
724 Internal derangement of joint
725 Displacement of intervertebral disc
728 Vertebrogenic pain syndrome

Other diseases of musculoskeletal system (730-738)

730 Bunion
731 Synovitis, bursitis, and tenosynovitis
733 Other diseases of muscle, tendon, and fascia
735 Curvature of spine
736 Flat foot
737 Hallux valgus and varus
738 Other deformities

Congenital anomalies (740-759)

744 Congenital anomalies of eye
746 Congenital anomalies of heart
747 Other congenital anomalies of circulatory system
749 Cleft palate and cleft lip
750 Other congenital anomalies of upper alimentary tract
751 Other congenital anomalies of digestive system
753 Congenital anomalies of urinary system
754 Club foot (congenital)
755 Other congenital anomalies of limbs
756 Other congenital anomalies of musculoskeletal system
757 Congenital anomalies of skin, hair, and nails

Certain causes of perinatal morbidity and mortality (760-779)

772 Birth injury without mention of cause
776 Anoxic and hypoxic conditions not elsewhere classifiable
777 Immaturity, unqualified

Symptoms referable to systems or organs (780-789)

780 Certain symptoms referable to nervous system and special senses
781 Other symptoms referable to nervous system and special senses
782 Symptoms referable to cardiovascular and lymphatic system
783 Symptoms referable to respiratory system
784 Symptoms referable to upper gastrointestinal tract
785 Symptoms referable to abdomen and lower gastrointestinal tract
786 Symptoms referable to genitourinary system
787 Symptoms referable to limbs and joints
788 Other general symptoms

Senility and ill-defined diseases (790-796)

790 Nervousness and debility
791 Headache
796 Other ill-defined and unknown causes of morbidity and mortality

Fracture of skull, spine, and trunk (800-809)

805 Fracture and fracture dislocation of vertebral column without mention of spinal cord lesion
807 Fracture of rib(s), sternum, and larynx
808 Fracture of pelvis

Fracture of upper limb (810-819)

813 Fracture of radius and ulna
816 Fracture of one or more phalanges of hand

Fracture of lower limb (820-829)

823 Fracture of tibia and fibula
826 Fracture of one or more phalanges of foot

Dislocation without fracture (830-839)

835 Dislocation of hip

Sprains and strains of joints and adjacent muscles (840-848)

844 Sprains and strains of knee and leg
847 Sprains and strains of other and unspecified parts of back
848 Other and ill-defined sprains and strains

Intracranial injury (excluding those with skull fracture) (850-854)

850 Concussion

Laceration and open wound of head, neck, and trunk (870-879)

878 Open wound of genital organs (external) including traumatic amputation

Laceration and open wound of upper limb (880-887)

884 Multiple and unspecified open wound of upper limb
886 Traumatic amputation of other finger(s) (complete) (partial)

Laceration and open wound of lower limb (890-897)

891 Open wound of knee, leg (except thigh), and ankle

Superficial injury (910-918)

910 Superficial injury of face, neck, and scalp
913 Superficial injury of elbow, forearm, and wrist
914 Superficial injury of hand(s), except finger(s) alone
915 Superficial injury of finger(s)
916 Superficial injury of hip, thigh, leg, and ankle
917 Superficial injury of foot and toe(s)

Contusion and crushing with intact skin surface (920-929)

920 Contusion of face, scalp, and neck except eye(s)
921 Contusion of eye and orbit
923 Contusion of shoulder and upper arm
926 Contusion of finger(s)
928 Contusion of foot and toe(s)

Effects of foreign body, entering through orifice (930-939)

930 Foreign body in eye and adnexa

Burn (940-949)

941 Burn confined to face, head, and neck
942 Burn confined to trunk
943 Burn confined to upper limb, except wrist and hand
946 Burn involving face, head, and neck, with limb(s)
947 Burn involving trunk with limb(s)

Injury to nerves and spinal cord (950-959)

953 Injury to nerve(s) in forearm
954 Injury to nerve(s) in wrist and hand
957 Injury to nerve(s) in ankle and foot

Other adverse effects (990-999)

992 Effects of heat
993 Effects of air pressures
995 Certain early complications of trauma
998 Other complications of surgical procedures

Motor vehicle traffic accidents (E810-E819)

E817 Noncollision motor vehicle traffic accident while boarding or alighting
E819 Motor vehicle traffic accident of unspecified nature

Water transport accidents (E830-E838)

E835 Other and unspecified fall in water transport

Accidental poisoning by gases and vapors (E870-E877)

E870 Accidental poisoning by gas distributed by pipeline

Accidental falls (E880-E887)

E880 Fall on or from stairs or steps
E881 Fall on or from ladders or scaffolding
E887 Other and unspecified fall

Accidents due to natural and environmental factors (E900-E909)

E905 Bites and stings of venomous animals and insects
E906 Other accidents caused by animals
E907 Lightning

Other accidents (E910-E929)

E912 Inhalation and ingestion of other object causing obstruction or suffocation
E917 Striking against or struck accidentally by objects
E920 Accidents caused by cutting or piercing instruments
E924 Accident caused by hot substance, corrosive liquid, and steam
E928 Machinery accidents not elsewhere classifiable
E929 Other and unspecified accidents

Surgical and medical complications and misadventures (E930-E936)

E930 Complications and misadventures in operative therapeutic procedures

Late effects of accidental injury (E940-E949)

E940 Late effect of motor vehicle accident
E943 Late effect of accidental fall
E944 Late effect of accident caused by fire
E946 Late effect of other accident
E947 Late effect of surgical operation
E948 Late effect of irradiation
E949 Late effect of other surgical and medical procedures

Suicide and self-inflicted injury (E950-E959)

E950 Suicide and self-inflicted poisoning by solid or liquid substances
E957 Suicide and self-inflicted injury by jumping from high place
E958 Suicide and self-inflicted injury by other and unspecified means
E959 Late effect of self-inflicted injury

Homicide and injury purposely inflicted by other persons (E960-E969)

E966 Assault by cutting and piercing instruments
E969 Late effect of injury purposely inflicted by other person

Injury resulting from operations of war (E990-E999)

E992	Injury due to war operations by explosion of marine weapons
E993	Injury due to war operations by other explosion

Additional codes used for this study only

1000	Tubal ligation
1001	Dental extraction
1002	Hysterectomy (apparently without antecedent medical cause)
1003	Dental decay and sepsis
1004	D & C for planned abortion
1005	Temporary prevention of employment due to pregnancy
1006	Temporary prevention of employment due to operation

Appendix K. Actual number of cases, among 469 women, of specific diagnoses from the medical history or the physical examination. Tables list the International Classification Code (see Appendix J) and the number of women in the sample who reported this code in the medical history or were found to have it on the physical examination. (For example, 9 women said they had congenital anomalies of the heart, 746, at birth.)

1. Medical History: Conditions reported at or from birth.

90:2
243:1
273:1
310:1
311:5
312:1
347:1
536:1
550:1
564:1
744:1
746:9
749:1
750:1
751:1
753:2
754:1
755:3
756:1
757:2
772:3
776:2
777:9
835:1
2949:1

2. Medical History: Conditions reported from the preschool period.

1:2
5:1
33:5
34:9
35:1
43:5
55:1
79:1
90:1
211:1
232:1
240:1
265:2
268:1
286:1
320:1
343:1
345:1
347:5
360:2
361:1
373:1
379:1
381:4
382:3
383:2
384:1
390:4
429:1
463:9
485:3
486:19
493:6
507:1
510:1
529:1
536:1
540:2
541:1
580:1
590:1
595:2
683:2
691:5
708:1
720:1
724:1
744:1
747:1
749:1
750:1
751:1
753:1
755:1
757:1
784:1
796:1
813:2
816:1
823:1
847:2
884:1
910:2
928:1
942:1
943:1
2929:1

3. Medical History: Conditions reported from the school period.

1:1
11:3
34:13
38:1
43:4
44:2
46:1
53:1
55:2
70:10
90:2
173:1
211:1
215:1
225:1
232:1
235:1
240:2
242:1
244:1
246:2
250:2
277:2
281:1
300:1
323:1
343:1
345:4
346:1
347:1
373:2
374:1
378:2
381:5
382:3
384:3
390:10
391:4
392:1
427:1
429:3
463:14
466:1
485:1
486:13
490:2
493:7
503:1
507:2
511:1
529:1
540:6
541:37
542:1
550:1
564:1
565:1
567:2
580:1
590:2
592:1
595:1
615:1
622:1
626:2
682:2
683:3
684:2
691:1
692:1
696:1
708:1
712:1
720:1
722:1
728:1
735:2
753:1
782:1
785:1
786:1
787:1
802:3
805:1
807:1
810:1
813:10
816:1
818:1
821:1
822:1
823:2
826:1
828:1
836:1
844:1
847:3
850:1
878:1
886:2
891:1
910:2
913:1
914:1
916:2
921:1
926:1
941:3
946:1
947:1
995:1
1003:1
2817:1
2819:2
2880:1
2881:1
2906:1
2924:1
2940:1
2943:1
2947:1
2969:1

4. Medical History: Conditions reported for the post-school period, excluding the last year.

1:1
11:7
23:1
34:4
38:1
43:1
56:1
70:8
75:2
79:1
180:3
182:2
183:1
210:1
211:2
214:2
215:5
216:2
217:11
218:14
220:14
221:4
224:1
232:1
234:3
235:2
236:1
239:2
240:4
241:4
242:1
244:5
246:5
250:15
255:1
269:2
277:1
280:5
281:15
285:1
287:1
294:2
296:8
299:1
300:35
303:1
305:23
309:1
320:1
340:2
343:1
345:6
346:8
350:3
353:4
355:2
364:1
366:1
369:1
373:1

4. Continued

374:1
375:1
378:1
380:4
381:8
382:3
384:2
385:2
386:1
387:1
389:2
390:5
391:4
401:37
402:2
410:7
421:1
427:3
428:1
429:5
430:2
435:2
450:3
451:10
454:24
455:11
456:1
463:8
466:1
480:1
485:2
486:32
490:8
491:2
492:3
493:16
503:2
504:1
505:1
507:1
511:2
512:2
530:1
531:6
532:4
533:8
535:4
536:1
537:2
540:6
541:42
542:1
550:7
551:30
553:2
560:2
561:8
562:3
565:2
566:2
574:34
575:21
577:2
580:1
582:2
590:30
592:6
593:2
595:6
596:1
598:3
599:1
610:5
611:1
614:1
615:6
616:1
620:2
622:1
623:23
624:1
625:5
626:35
627:1
629:3
631:13
632:3
633:1
637:7
643:12
651:1
653:2
680:1
682:5
683:3
684:1
691:1
692:9
696:5
700:2
702:1
704:1
707:2
708:2
709:1
712:2
713:3
714:3
715:15
720:1
724:1
725:11
728:12
731:3
733:4
735:2
737:3
785:8
787:3
791:2
805:2
807:2
808:1
813:3
816:2
823:14
844:1
847:8
850:1
891:1
910:1
913:2
914:1
921:1
923:1
926:1
928:1
930:1
957:1
992:1
993:1
1000:69
1001:2
1002:14
1003:2
2819:27
2835:1
2870:1
2906:1
2907:1
2912:1
2917:1
2920:1
2928:1
2940:3
2943:2
2944:1
2946:3
2947:4
2949:2
2950:1
2958:1
2959:1
2966:1

5. Medical History: Conditions reported for the last year.

34:1
35:1
79:1
153:1
180:1
214:1
217:2
218:2
220:1
234:1
242:1
244:5
250:16
255:1
277:5
280:3
281:8
296:2
300:17
305:8
340:2
343:1
345:4
346:2
353:1
355:1
361:1
374:2
380:1
381:1
384:1
389:1
391:2
401:27
402:3
410:1
413:1
427:1
429:3
433:1
451:4
455:2
460:2
463:2
466:1
485:1
486:5
490:6
491:1
492:4
493:11
503:2
505:1
506:1
508:1
511:1
512:2
517:1
531:1
532:2
533:3
535:4
541:1
551:11
560:1
561:3
562:3
564:2
574:5
575:8
577:1
582:3
590:8
593:2
595:10
598:1
610:1
613:1
614:1
620:4
621:2
622:1
623:6
626:15
627:1
643:1
645:2
682:1
683:2
684:1
691:1
692:3
698:1
700:2
706:1
707:1
708:4
712:2
713:1
714:5
715:14
718:1
722:1
725:4
728:11
730:1
731:10
733:1
735:1
782:1
785:4
787:5
788:2
791:1
813:1
816:1
823:1
826:1
844:1
847:7
848:1
910:1
915:1
917:2
920:1
928:2
953:1
954:1
1000:9
1001:2
1002:3
1004:1
2819:5
2880:1
2887:1
2905:1
2906:1
2940:4
2943:1
2947:2
2949:1
2950:1
2958:1

6. **Physical Examination:** Conditions diagnosed by physician (no gynecological examination was done).*

44:3
110:1
216:1
241:3
244:1
250:5**
253:1
255:1
263:1
267:1
269:2
277:27
280:1
294:2
296:6
300:4
301:1
303:2
305:8
310:1
311:5
312:1
340:2
343:1
344:2
345:7
347:1
350:1
352:3
353:1
354:1
356:1
374:1
378:20
280:2
281:1
389:21
394:7
395:2
401:37
402:3
403:2
412:3
413:2
426:2
427:2
429:1
440:1
441:1
442:1
443:1
451:2
454:16
490:3
491:6
492:6
493:6
507:2
512:1
517:2
519:1
524:1
530:1
532:1
550:1
551:2
571:1
573:1
582:2
590:2
614:1
626:1
680:1
682:1
690:1
692:18
696:2
706:2
707:1
708:1
709:1
712:6
713:6
715:4
721:1
725:1
728:6
731:2
733:1
735:2
736:1
738:3
780:1
781:1
783:2
785:3
791:1
835:1
847:3
886:1
953:1
998:1
1005:4
1006:2
2940:6
2943:4
2946:5
2947:4
2948:1
2949:2
2969:1

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*These diagnoses include only those that, in the opinion of the examining physician, contributed significantly to disability. Thus, although 44 women were found to have varicose veins on the examination (Table 47), only 16 of these are listed here; the others had only minor varicosities.

**These five women had clinical evidence of diabetes; no tests for glucose in the blood or urine were performed. Sixteen women had a medical history of diabetes.